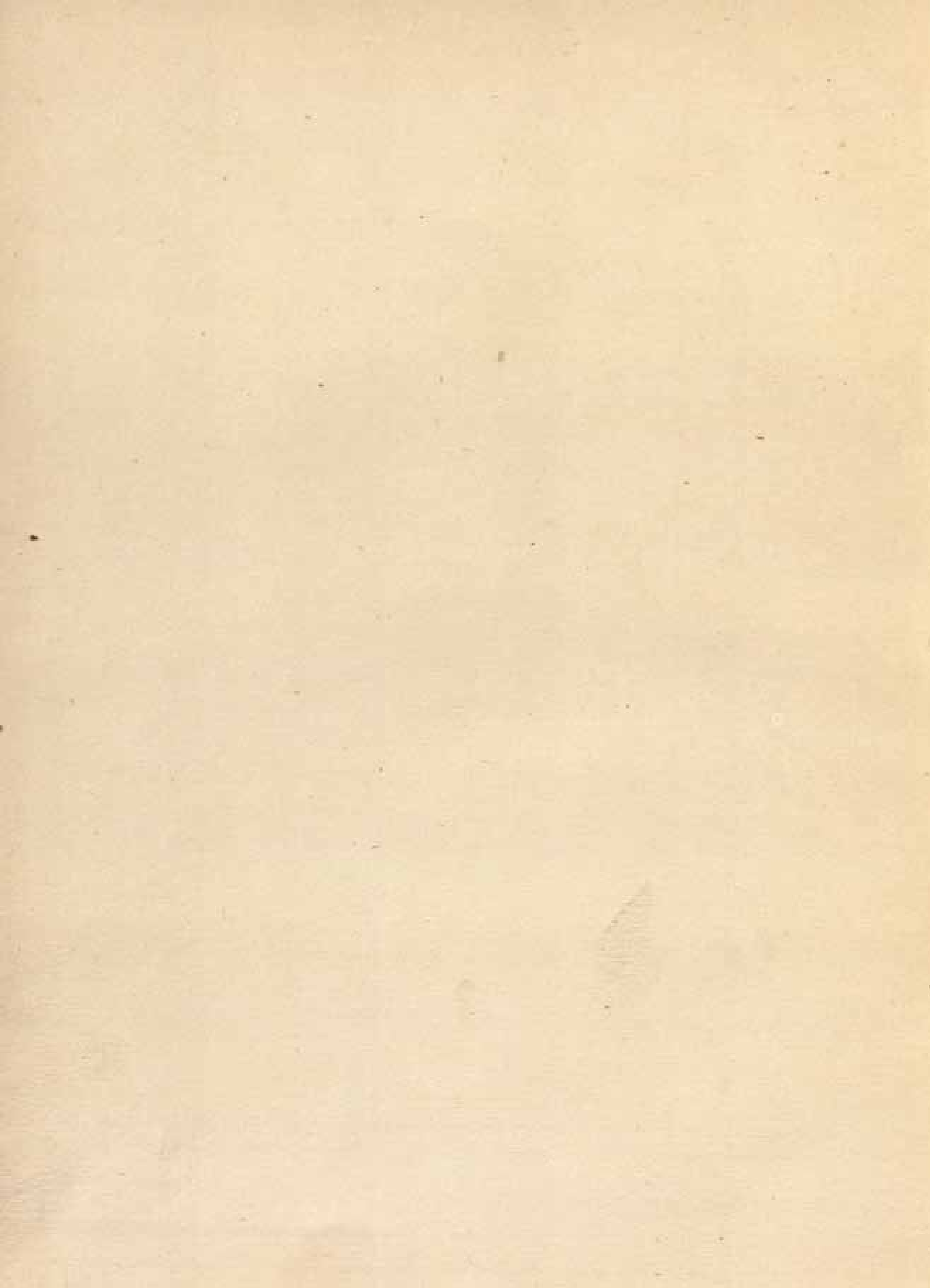
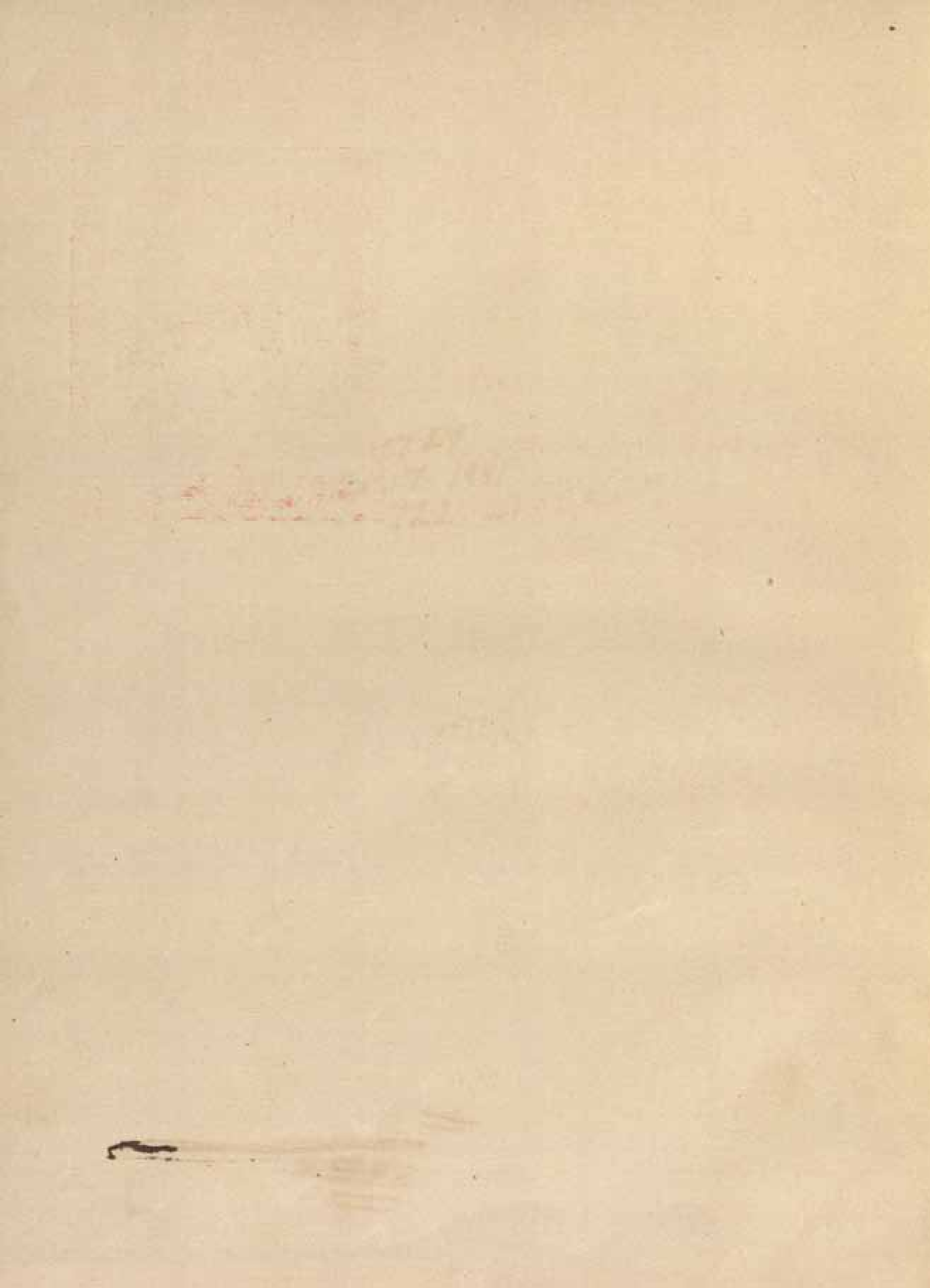


MAGADHA
ARCHITECTURE AND CULTURE


॥ श्रीं नमो विश्वकर्मणे ॥
स्थापत्यविशारद



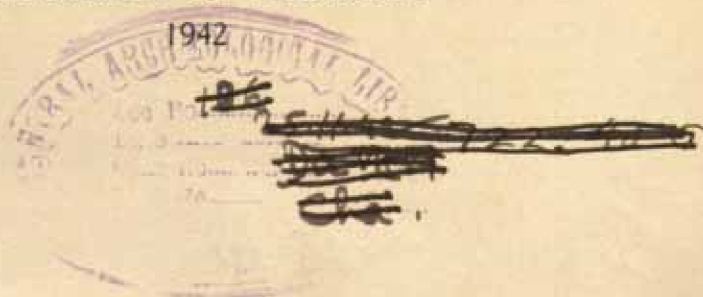
MAGADHA
ARCHITECTURE AND CULTURE

SRIS CHANDRA CHATTERJEE, C.E., STHĀPATYA-VIŚĀRAD
Formerly Civil Engineer, Bikaner State, Founder, School of Indian Architecture,
Member, The National Planning Committee





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TO

THE SACRED MEMORY OF

SIR ASUTOSH MOOKERJEE

IN TOKEN OF

THE AUTHOR'S GRATEFUL VENERATION

CONTENTS

FOREWORD

It gives me great pleasure to record my appreciation of the intense love for Indian architecture that has continuously inspired Mr. Sris Chandra Chatterjee to tour India and Greater India and, ultimately, to sacrifice his everything for its rescue from decay, if not extinction. For many years Mr. Chatterjee has been working single-handed to arouse public sympathy in favour of our ancestral architecture. In his personal capacity he founded and maintained a modest School of Indian Architecture where experiments were carried on in respect of developing allied arts, crafts and industry. Specimens of his works have been illustrated in the monograph. In India, Europe and America, his efforts have been enthusiastically appreciated by leading architects and art academies.

Indian Architecture has a record of unbroken development for thousands of years. But it has been neglected during the last two centuries. It has been treated as Museum treasure merely, as a dead subject for the student of history and culture to be acquainted with. It is our duty to make it living again, should we desire an honoured place in the Comity of Nations.

The purpose of this publication is not merely to repeat the historical events concerning Magadha, or reproduce with attractive accounts some of its archæological monuments, but to present before every cultured Indian multicoloured pictures of the glorious days of Magadha: how the people lived, what their ideals were, to what extent the spiritual belief and social demands of the nation influenced their town-planning and architectural environments, and above all, how in spite of limited resources at our disposal, due mainly to lack of state support, the healthy and artistic life of India which

made the wonders of Rājagṛiha, Pāṭaliputra and Nālandā possible can be revived to some extent at least. I congratulate the author upon his imaginative faculty not inconsistent with the spirit of historical research. One cannot but admire his ability for a synthetic grasp of the entire life movement of a civilisation.

Magadha is the cradle of a great civilisation. It fostered rival schools of philosophy, all of which contributed to the formation of a virile religion broadly termed Hindu. Architecture with allied arts originated and flowered in its creative soil. All the other phases of national activity and aspiration found distinct and eloquent expression in its historic capital Pāṭaliputra which was nowhere surpassed by any of the then existing capital-cities flourishing in the ancient world. Religion, Art, Science, Literature and Engineering, all developed to a high degree of excellence. Currents and cross currents of spiritual thought and material prosperity flowed simultaneously to stimulate the creative energy of Magadha and lay the correct foundations of Indian Nationalism.

The achievements of Magadha, however, attained maximum height at the instance of the International Universities of Nālandā, Uddaṇḍapura and Vikramaśila. For over six hundred years the monastic establishments ungrudgingly and impartially patronised all branches of Brahmanical and Buddhistic faiths and learning. Religion and Literature, Art and Music, even scientific studies of Medicine and Applied Chemistry, were zealously cultivated in well-equipped colleges and laboratories.

History has witnessed how the life of the Indian nation began and ended in Magadha with the rise of Rājagṛiha and decline of Nālandā and Gauḍa. Refracted light from the temple avenue of Nālandā illumined for a time several provincial organisations. But never again India could assemble on a strong cultural platform. The glory of Magadha is, however, imperishable. The traditions of Pāṭaliputra and

Nālanda will for all time to come enliven and inspire India and the World to live peacefully in a bond of love and compassion ;— Magadha, the rise and fall of which constitutes the central and main event in the history of India's great past ; Magadha, which has witnessed the rise of Buddhism, destined to become a great force in civilisation ; Magadha, which produced Aśoka, the most enlightened emperor who devoted the entire resources of a vast sub-continent to the moral and spiritual uplift of humanity and thereby carved out a unique place for Jambudvīpa between the Orient and the Occident ; Magadha, which under the Guptas and Pālas reached the zenith of cultural development with much wider expansion, particularly in respect of a complete synthesis of Architecture and allied arts.

Mr. Chatterjee looks forward to the active co-operation of all lovers of Indian Art. He represents the spirit of Renaissance in Indian Architecture. It is in this light, and this alone, that his work should be judged and appreciated. As a worthy exponent of the spirit of Indian Architecture and Culture, may he not fail to interest seekers of Truth and Beauty, irrespective of race, creed or community.

77, Asutosh Mookerjee Road, Calcutta.
The 15th May, 1942.

S. P. Mookerjee

INTRODUCTION

The period of the Indian Renaissance may be said to have started with the contact of India with the West after the establishment of British Rule. Renaissance is not merely a simple revival of the past. It is a re-orientation of ancient ideals to new conditions. This kind of change has taken place in the different spheres of our cultural life—Religion, Philosophy, Literature, Fine Arts, etc. The names of Raja Ram Mohan Roy, Devendra Nath Tagore, Keshub Chunder Sen, Dayanand Saraswati, Rabindranath Tagore, Abanindranath Tagore and Gandhi occur to one's mind when one reflects on the vital changes through which this country has passed in recent times. It is, however, unfortunate that a similar emphasis on our ancient ideals in the field of Architecture has not occurred to any adequate degree. This book, *Magadha Architecture and Culture* by Mr. Sris Chandra Chatterjee, intends to bring about a judicious development of our Architectural science and save us from the wave of vulgarity which is on us at the moment. He gives a vivid and interesting account of the glories of Magadha and rouses us to a consciousness of the great fall from those ancient days. If India's architecture is not sufficiently Indian, if it is a mixture of varying patterns, it is because our lives themselves are a patchwork. It is a common saying that humanity can be redeemed by beauty, and beauty in human life is possible only if our lives are rooted in the depths of spirit. We are carried away by sense impressions or logical ideas, but deeper than both these is the power of the soul, the artistic capacity located in each individual human being. If we live from the depths, our lives will have grace and beauty. An attempt should be made to raise the general tone of society so that every boy and girl will have music in the voice rhythm in the gait and

beauty in the limbs. The houses we dwell in are so much a part of our life that they reflect the high ideals we possess. If our ideals are low, our buildings will be dull and uninspiring; if our ideals are high, they will be impressive and elevating. Before we shape the body, the soul must be trained. This book is intended to convey to us an idea of our own ideas of architecture and impel us to put them into practice in our buildings. I am not competent to offer any reasoned and expert opinion on the subject of Indian Architecture. This, however, I can say without hesitation that Mr. Sris Chatterjee has given much time and thought to this subject. He is a lover of Indian art and architecture and is impelled by a noble desire to see the ancient designs adapted and accepted on a large scale. If his work succeeds in enlisting sympathy from those who are in a position to help it, it would have achieved its object.

BENARES,
26th May, 1942. SARVAPALLI RADHAKRISHNAN

PREFACE

During my travels in most parts of India and portions of Greater India, I found distinct traces or remains of ancient and mediæval Indian towns,—and I was invariably inspired by a vision of ancient India resplendent with fortresses, palaces, residences, temples and gardens of the kings and people with all their artistic and healthy outlook. The eternal messages of Ajanta and Ellora, Mamalla-puram and Conjeevaram, Dilwara and Vijaynagar excited my imagination and enchanted my soul. Ancient Indian literature including the Epics and the Purāṇas, publications on Hindu and Buddhistic philosophy, treatises on town-planning in ancient India and histories and illustrated monographs and memoirs on Indian fine arts and architecture revealed to me the intrinsic value of Indian civilisation.

For years together I travelled and travelled in the quest of Beauty and Truth,—pondering over the glorious past of the sub-continent. And with the eyes of an inquisitive architect, reinforced by the knowledge I earned from library, I scrutinized numerous monuments of Indian architectural arts scattered over the beauty-spots of India. Alone I roamed in the dense, virgin, tropical evergreen forests of Burmo-Chinese frontiers, spending sleepless nights in the teak-leaf-covered mud-huts of the jungle-people. I walked hundreds of miles in Kashmir valley, Kedarnath plateau, Darjeeling gorges, over the spreading sea-coasts of the Coromandel and the Malabar, in arid Jaiselmer state in the very heart of the great desert named Thar, thorny Aravalli ranges of Mewar from Chitoregarh to Kumbhalgarh, the antiquated expanse of the Indus valley, and in the sunny highlands of smiling Ceylon. My fanciful dreams were stimulated by the wonders of Indian architectural creations nurtured in the lap of Nature.

But what made the deepest impression on my happiest dreams was a colourful and ever-moving kaleidoscope of the well-organised and progressive, yet artistic, life of the people of pre-historic ages who settled in the fertile valleys of the mighty Ganges and the Sôn along the picturesque regions of the great empire of Magadha subsequently governed by Chandragupta and Aśoka. The halo of the distant grandeur of the hoary Himalayan forests aroused in me the desire to lift myself up to the ennobled life as it was, when spiritual and artistic life-current was strong and vigorous in the India of Bimbisara, Aśoka, Samudragupta and Vikramāditya Chandragupta. It made me realise to the fullest extent of my being the supreme spiritual atmosphere and mystic charm that created and stimulated for centuries and centuries the architectural arts and cultural expressions of Magadha.

Actuated by the desire for entering into the creative spirit of Rājagṛiha, the capital of Magadha, in all its sublime ramifications, and in all its eloquent expressions, and for giving to the interested public some faithful idea of its unbroken development for 2,000 years, I have ventured to compile this little illustrated monograph on the architecture and culture of Magadha, the fountain-head of Indian arts, crafts and industry. I have tried to strengthen my argument with consistent, histor:cal and archæological evidence. The major portion of the monograph, concerned as it is with the science of archæology and building engineering, is claimed as accurate. The portion on The Message of Magadha and The Dawn of Buddhahood is also claimed to be accurate. The portion preceding the conclusion explains in a nut-shell the irresistible influence of Nature in designing the classical architectures of the world in an historical perspective. The concluding pages advocate the claims of the national architecture of India and suggest a constructive scheme for its resuscitation from threatened extinction. Only in the case of portraying the city of Rājagṛiha with a description of the social and civic life of

the kings and peoples, I could not but strain my imagination to some extent.

I am not a technical scholar, and the present monograph is not to be judged in the light of technical perfection, though I may say that I have spared no pains to utilize all available records, literary and otherwise, that may be considered sufficient to produce a clear picture of Rājagṛiha and its people.

Yet I feel that I should offer an explanation as to why I have linked up some confusing events and elements concerning different ages in the history of India, covering five or more centuries, in my attempt to portray the physical features and civic life of Rājagṛiha. My argument is this : if the principles of planning the pre-historic cities of Mohen-jo-Daro, Harappa and Chanhu-Daro with their excellent arrangements for communication, water-supply, drainage and sanitation claim in certain respects similarity with those of modern Indian towns, if the brick-joints facing the steps attached to the great Bath of Mohen-jo-Daro clearly indicate the principles of brick-laying in modern building construction with " English Bond " in all its ingenuity, if the hidden stairway leading to the upper storey of the fortified residence of the feudal Rajput chieftain overlooking the shining-blue water of the Jayasamudra lake of Mewar recall the double-storied structure in Mohen-jo-Daro with identical arrangement for staircase leading to the top floor, if the technique and icons of the Indus Valley seals and terracotta objects of art are, though in developed forms, traceable in the ensembles of the Buddhistic and Gupta arts and crafts, if the ' saraswati-har ' (necklace) and bracelets of modern India look like some of the ornaments recently unearthed in the Indus Valley, if the pottery of India of 5,000 years back has remained almost unchanged in this country of to-day, if the modern method of pile-driving in weak soil, to withstand heavy load, is noted in Kumrahar excavation at Pāṭaliputra below the massive compound wall of

Aśoka's palace, if the religious ceremonies and social affairs of the Hindus of 1,500 years ago in regard to foundation-laying, new-house-entering, and general planning of their houses, temples and ' dharamsalas,' etc., concur fundamentally with our current rituals and social transactions to a considerable extent, if the marriage, ' sradh ' and other ceremonies of the present Hindu are strictly based on the Vedic orders of performing religious ministrations, if the architectural form of the Borobudur stûpa in Java could develop from that of Pāhārpur (Bengal), and certain items in planning the capital of Old Pagan (Upper Burma ; Suvarna Bhumi) built by the king Pin Bya in the 9th century A.D. and the Thebaw's palace in Mandalay of the last century were more or less based on the traditional methods of town-planning of the Hindu monarchs, if the thoughtful designing of the magnificent city of Jaipur (Rajputana) followed the traditions of ancient Indian town-planning, and if the curious custom of tying a monkey to a post in a horses' stable with a belief to bring good health and good luck to horses, as it prevailed in identical manner in the resplendent Ujjain (Ujjayini) of 2,000 years back, is still now followed in this land, then the principles of planning the ancient Rājagṛiha of Bimbisara and the then prevalent manners and customs of the kings and people of Magadha were certainly adopted more or less in the time of Kautilya in respect of town-planning and social and ceremonial adjustments, and were subsequently followed by those in Buddhistic and Gupta ages. The ideals and aspirations of the " nagarakas " of Rājagṛiha must have influenced the groups of citizens inhabiting different provinces of Magadha and neighbouring kingdoms, consistently with what were recorded in Sanskrit dramas and Pali literature. They were more so because the life-current of ancient India followed its course through long and comparatively straight channels, unsullied by extraneous influences, in sad contrast to what it has been subjected to at the present period of Indian life and outlook.

My stay at Bikaner, as civil engineering officer, for a fairly long term, my researches in Udaipur where I spent about six months, as a State guest, with all facilities for scrutinising the mediæval Indian monuments as well as the present fairly unsophisticated life in Mewar, and my study of the palaces and towns in Jaiselmere, Kailawāra, Indraprastha, Ujjayinī, Vijayanagar, Mandalay, Pagan, Angkor Thom and elsewhere in India and Further India enabled me to pick up some idea about the plans and designs of ancient Indian towns and palaces, the traditions of which (as recorded in ancient literature regarding descriptions of the same) were more or less followed at Bikaner, Vijayanagar and Ujjain. Certain aspects of the social life prevailing in those places attracted my special attention. Those aspects, including the manners and customs maintained particularly by elderly ladies there, and the styles of some of their costumes, ornaments and household furniture, are traceable in Sanskrit, Pali and Tamil literature.

Lovers of Indian arts and culture should appreciate the very laudable attempt of Dr. Rajendra Prasad, President of the Indian National Congress, to revive the glories of Magadha in respect of architecture, and his active co-operation with the present writer with a view to beautifying and dignifying the city of Patna with a model of a modern Indian structure in developed Gupta style of architecture, which is under construction, to be utilised as a Congress National Hall.

Restoration of 'Building-Khaddar' which encompasses all kinds of indigenous architectural arts, crafts and industry all over India will secure employment for millions of workers—several times more than the number of weavers maintained by 'Khaddar' industry—remove economic distress in many ways to a considerable extent and rescue our finest cultural expression from strangulation.

The writer will remain grateful to his esteemed friend the Hon'ble Dr. Syamaprasad Mookerjee, lately the illustrious Vice-Chancellor of

the University of Calcutta, for his active co-operation in the movement for the renaissance of India's architecture, for his introducing the Degree Course in Architecture in his University, and for his selection of this humble monograph as the first publication of a series of Indian architectural memoirs which he contemplates to publish at the instance of the University of Calcutta. It was he who organised the large successful exhibition of All-India Architectural Arts, Crafts and Industries in the Senate Hall of Calcutta, under the direction of the humble writer, which was considered as the first of its kind in India. Exhibits were sent from all parts of India, Burma and Ceylon. Photographs of interesting modern structures with Indian feel about their facades, constructed in Sanfrancisco, Tokio, Moscow and Colombo were exhibited. The Government of His Exalted Highness the Nizam Bahadur of Hyderabad deputed for the exhibition Mr. K. Ahmed, M.A., learned Curator of Ajanta Museum, with wagon load of full size paintings, photographs and architectural drawings representing the arts of Ajanta, Ellora and modern Nizamabad. His Highness the enlightened ruler of Travancore lent exquisite specimens of ancient and modern works on ivory. His Highness the Maharajadhiraj Bahadur of Benares presented a group of enlarged photographs illustrative of the entire range of the fascinating Ghats in Benares from Baruna to Asi-sangam. The splendour of Jaiselmer, then almost unknown to Calcutta public, as well as the marvels of Dilwara, Kashmir, Mewar, Mysore, Nepal, Agra, Fatehpur Sikri, etc., was revealed to the lovers of art and culture. Architectural arts of Indo-China and Java were fairly representative. Chatterjee's School of Indian Architecture displayed various branches of modern Indian arts. Crowning all, photographs of certain most precious finds of Harappa and Mohen-jo-Daro of the Indus valley, were kindly entrusted to me by Rao Bahadur K. N. Dikshit. The Exhibition gave impetus to the formation of a permanent Museum of Fine Arts in the University of which the founder,

Dr. Syamaprasad Mookerjee, should be proud. Inspite of his immense pressure of work of country-wide importance, besides his very responsible duties as Finance Minister, he has been good enough to write the Foreword promptly. One may expect much more solid work from his constructive genius for the rescue of India's Architecture.

I should also mention in this connection the genuine sympathy and co-operation of my esteemed friend the Hon'ble Mr. A. K. Fazlul Huq, Premier of Bengal, bestowed on various occasions. It was the Government of the Hon'ble Premier that promptly approved the recommendation of the University of Calcutta for the introduction of the Degree Course in Architecture. Not long ago he issued an appeal for public co-operation in my cause.

Gratefully I acknowledge the valuable suggestions of Mr. J. C. Chakravorti, M.A., Registrar, University of Calcutta, Professor Dr. B. M. Barua, M.A., D.Lit. (Lond.), Professor Dr. Dineschandra Sarkar, M.A., P.R.S., Ph.D., Mr. T. Vimalaṇand, M.A., Assistant Secretary of the Mahabodhi Society, Calcutta, Mr. D. Gangulee, B.A., Superintendent and Mr. J. M. Ray of Calcutta University Press. Dr. Barua has corrected the proofs and assisted preparation of the Map of Rājagṛiha. Mr. Bijay Singh Nahar, Councillor, Corporation of Calcutta, kindly allowed me to consult certain rare books from his oriental library. Mr. Umaprasad Mookerjee, M.A., the eminent traveller and art-connoisseur, has taken a keen interest in this publication.

My energetic Secretary, Professor Bulbul Mittra, M.A., has laid me under obligation by offering some valuable suggestions. A Master of Arts in Indian History and Culture, a practising modeller and a keen student of painting and Indian architecture, a graduate in Indian Music as she is, Kumari Mittra, after some training, will be expected to contribute substantially to the renaissance of Indian Arts.

I am deeply indebted to my kind friends, Dr. Suniti Kumar Chatterji, the eminent scholar, and Mr. J. C. Mukerjea formerly Chief

Executive Officer to the Corporation of Calcutta. Their advices and co-operation were very helpful to strengthen some of my previous articles and schemes. To popularise Indian Architecture Mr. Mukerjea had some of his municipal structures constructed in Indian styles. Mr. Amal Home, Editor of the Calcutta Municipal Gazette, has continuously championed the cause of Indian Architecture.

The Hon'ble Mr. Justice C. C. Biswas, C.I.E., has been helping my mission. His presidential speech at a conference of Indian architecture which was held at the Senate House, Calcutta, supported the scheme submitted by Mr. A. Macdonald, then Principal, B. E. College, to the formation of the Degree Course of Architecture the draft scheme and the syllabus covering the major portion of the course that dealt with Indian architecture and allied arts being prepared by myself. If the movement for renaissance of Indian architecture has succeeded in enlisting the sympathy of my countrymen, it is chiefly through the unstinted co-operation of friends like the Hon'ble Mr. Justice Biswas, Mr. N. C. Chunder, Lady Pratima Mitter, Lady Raman, Rao Bahadur K. N. Dikshit, Director General of Indian Archæology, Mr. S. A. Brelvi, Editor of The Bombay Chronicle, Dr. D. G. Vyas, Art-critic, Bombay, Babu Anugrahnarain Singha, ex-Minister of Finance, Patna, Sir. C. P. Ramaswamy Aiyer, K.C.I.E., Mr. Percy Brown, Nawabzada A. F. M. Abdul Ali, Mr. Ramananda Chatterjee, Mr. A. P. Dalmiya, Sir Cowasji Jehangir, K.C.I.E., Mr. T. N. Kedar, Vice-Chancellor, Nagpur University, Dr. Meghnad Saha, Mr. Subodhkumar Ghose, B.C.E., A.M.I.E., Mr. Tusharkanti Ghosh, Editor of The Amritabazar Patrika, Madam Sophia Wadia, Dr. J. C. Ghose, Director, Indian Institute of Science, Bangalore, Mr. M. D. Bhatt, I.C.S., Municipal Commissioner, Bombay, Mr. S. D. Prabhavalkar, Chairman of the Housing Sub-Committee of the National Planning Committee, Mr. N. V. Modak, M.I.C.E., Chief Engineer, Bombay Municipality, Mr. M. Y. Nurie, ex-Minister of

Public Works, Bombay, Mr. Pravas Chandra Chatterjee, Foreign Minister to Mewar Government, Sreematee Tandra Devi (Maud MacCarthy), Rt. Hon. Sir Tej Bahadur Sapru, Kt., Dr. B. C. Roy, Dr. A. H. Pandya, D.Sc. (Glasgow), Principal, Bengal Engineering College, Mr. N. C. Chatterjee, Barrister-at-law, Mr. Ajit Ghose, President, Fine Arts Section, Sixth All-India Oriental Conference, Dr. Kalidas Nag, The Hon'ble Mr. Nalini Ranjan Sarkar, Silpacharya Nandalal Bose and Sir Nripendra Nath Sircar, K.C.S.I.

I am grateful to Pundit Jawaharlal Nehru for his most valuable co-operation. He arranged my lectures at Allahabad University and supported my mission in various ways. As Chairman of the National Planning Committee, he accepted all my suggestions concerning the perplexing problems of National Housing. Equally thankful I am to Sri Subhas Chandra Bose whose zeal for renaissance of Indian architecture knew no bound. I reproduce in this publication extracts from their statements.

I gratefully acknowledge that Plates I to III, VI, VII and XIII have been reproduced from Archæological Survey Reports, copyright reserved by the Archæological Survey Department. Plates IV and IX have been reproduced from "The Monuments of Sanchi" by Sir John Marshall by courtsey of the Archæological Department, Bhopal State.

SRIS CHANDRA CHATTERJEE

LIST OF ILLUSTRATIONS

RAJAGRIHA

Venuvana

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RUINED FORT

From Pataliputra, Nalanda & Pavapuri

SARASWATI R.

RAJAGRIHA (The inner city)

From Gaya

YASHTI VANA (PALM

Way to JIVAKA'S AMRAVANA & BUDDHA VIHARA

PANCHANA R.

I VAIBHARA
II PANDAVA (VIPULAGIRI)
III VAIPULYA (RATNAGIRI)
IV GRIDHRAKUTA (UDAIGIRI)
V RISHIGIRI (SONAGIRI)

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2 Jarasandhaka-Baithak.
3 Satdhara.
4 Surajkund.
5 Tapodas.
6 Bastion
7 North Gate.
8 Sonar Bhandar.
9 Maniyar Math.
10 Ranbhum.
11 South Gate.
12 Banaganga H.S.
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15 Ajatasatru's Stupa.
16 Jwala Temple.
17 Burning Ghat.

N.B. Compound walls along hills shown thus ----

I

HISTORY OF MAGADHA

THE ANTIQUITY AND INDIVIDUALITY OF THE ARCHITECTURE AND CULTURE OF MAGADHA

MAGADHA evolved and developed a unique civilisation and building arts of its own, at a very remote age, independent of the influence of Vedic culture. The Vedas did not recognise the importance of Magadha culture. If the identification of Magadha with "Kikaṭa," mentioned in Vedic literature as a place inhabited by the "Vrātyas," be correct it may be stated that Magadha developed a culture of its own even long before the rise of Buddhism.

As a matter of fact, being situated beyond the eastern limit of purely Aryan culture, Magadha resisted the cultural aggression of the Aryans for a long time during which the neighbouring kingdoms of Kośala (Oudh), Kauśāmbi (Allahabad) and Videha (North Bihar) came under the Aryan domination. Eventually, after the aryanisation of Mithilā, it gradually became more or less influenced by the Vedic Brahman outlook, yet maintaining its individuality all the time. Long before the compilation of the Purāṇas it was recognised as an important centre of culture. Its capital Girivraja is mentioned in the pages of the Rāmāyaṇa. In the days of the Mahābhārata warfare, Girivraja was governed by two successive kings, Bṛhadratha and Jarāsandha, who were "unequalled in prowess and splendour by any contemporary king." Jarāsandha declared war against Kṛiṣṇa when the latter killed his son-in-law Kaṃsa, the king of Mathurā. And Nagnajit-Suvala, the king of Gāndhāra,

and father of the Kaurava queen Gāndhāri, identified by some with an architect-sculptor-painter artist of that name, joined Jarāsandha against Krișṇa.

The greatness and splendour of Magadha continued unbroken till the administration of the king Seniya Bimbisāra of the Haryaṅka family, the first historical ruler of Magadha, *cir*. 519-491 B.C., whose capital was Rājagṛiha. Rājagṛiha was but another name for Girivraja which, according to a very ancient tradition, was built by the great Brahman Mahāgovinda, an architect well versed in the subject of Town-Planning. This very city was known in earlier ages by other names as well. It is said that one king Vasu established on the identical site a city, named Vasumatī, which subsequently came to be known as Girivraja, Bārhadrathapura, Kuśāgrapura, Magadhapura, etc.[1]

SPLENDOUR OF RĀJAGṚIHA

The city of Rājagṛiha was laid after the principles of fairly advanced Town-Planning. It was surrounded by a 10 feet high and 16 feet thick boundary wall of unhewn blocks of stone, each block about four feet long.[2] The wall connected the crests of all the five adjoining hills encircling the valley, for a length of about thirty miles. Above the wall (rampart) was raised a superstructure of smaller stones or bricks and, in places, of both wood and stone combined. Solid, rectangular bastions of the same materials, about 50′ × 40′ in plan, strengthened the wall at irregular intervals. Stairs or ramps were built in the thickness of the wall, along its inner face, in order to give access to the top which accommodated soldiers for defensive purposes. Helmet, breast-plate, armour, hand-guard and thigh-guard made of

1 See Map of Rājagṛiha.
2 See Plate I, Fig. 2, Cyclopean Wall: Rājagṛiha.

iron and bronze as well as bow, arrow, sword, shield, axe and lance, etc., equipped the soldiers in defending the city.

The wall all round had 32 large and 64 small gates. More important gates contained very heavy doors of stone slabs. The slabs were jointed together by strong iron clamps both vertically and horizontally. Other gates had lighter doors of stone or of wood strengthened by metal plates. The larger gates were spanned by lotus-petal shaped, strong arches flanked by tall Watch-Towers of stately proportion. The smaller gates were supported by thick stone lintels over corbels. Several Watch-Towers are yet to be seen adjoining the hills. One of them, situated at a place 250 feet above the bed of the Bāṇagaṅga rivulet is known as "Jarāsandha-kā-Baiṭhak."[1] The Baiṭhak was composed of huge, undressed stones piled one upon the other and is now seen about 50 feet square and 28 feet high.

Foreign merchants and outsiders had to deposit their arms at the main gates before entering the city, pay "tolls" and customs, and sell their merchandise. From the crests of towers "Dauvāricks" sounded trumpets to announce "praharas" at regular intervals of day and night.

An adequate number of arteries of communication were distributed in between the gates. Drainage and Water Supply were regulated in an efficient manner. In the middle portion of the city, and enclosed by high walls, stood the majestic Palace with all its appurtenances connected by spacious courtyards. King's Audience Hall on high basement, many-pillared Hall for Durbar, apartments and baths for the royal ladies around stone-paved court-yards, maintaining strictest privacy, fountained chambers underneath the palaces for use in the summer, weeping chamber, "Nāṭyaśālā" and fresco-painted "Saṅgīta Maṇḍapa," Council Chambers, Tribunal, private and public Offices,

[1] See Plate II, Fig. 3, Jarāsandha-kā-Baiṭhak (2 in Map).

Treasury, Ministers' apartments, King's kitchens, large wells constructed of wedge-shaped and well-burnt bricks with flights of steps leading down to the crystal water, Tanks (some of them consecrated with basalt pillars in their middles), giant water-lifters made of wood, stone-built Water-Towers, octagonal Royal Bath with Swimming Pool flanked by colonnaded corridors with small, ornamental balconies projecting over the pool, "Jala-Mandira," Queens' Garden with enclosures for lions and other animals, Sheds for birds, circular pleasure-houses concealed within thick groves, "Dhuma-Geha" (Hot Bath), "Māna Mandira" (Observatory), tall Watch-Towers in places, Arsenal, Guards' and poison-detectors' quarters, Stables for horses and elephants, cow-sheds bordering on tanks, Storage, Granary made of earthen rings, Shops, etc. There were arrangements for heating and cooling the royal chambers in different seasons. In day time the streets were watered and during night were lighted with torches.

The King and Queen would enjoy the charm of their moonlit garden from the "Ākāśa-Kaksha" (Sky-parlour) erected over the roof of the mighty Palace strengthened by bastions and corner towers soaring into the air. In dark nights they would study the movements of planets and motionless stars. The stucco-plastered walls of the parlour were so highly polished as to reflect the image of the Queen. The polished floor was treated with inlay work of coral or coloured precious stones. On the "naga-dantaka" (elephant's tusk) brackets, hung on stone walls, were kept "vīṇā" and other musical instruments besides various paraphernalia. Scent boxes of ivory, cups, jars, dishes, trays of gold, cane-baskets and leather-bags, arranged in cup-boards, contained among other things materials for toilet, *i.e.*, for "prasādhana" and "anulepana." Etched carnelian beads representing animals and birds were particularly favoured by the queen. Bimbisāra's queen, Kośaladevi, during her marriage, was assigned by her father, the king of Mahākośala, the entire revenue of a village near Kāśi yielding

100,000 coins as "nahāna-chuṇṇa-mūla" *i.e.*, bath and perfume money. Bunches of lotus, sweet-smelling garlands and sandal-paste impregnated the air with intoxicating fragrance. Incense was burned in incense-burner of wrought-metal. Also there were stocked mineral and vegetable colours for "chitralekhana" and "ālekhya," *i.e.*, for painting in skin-vessels.

Wooden boards for playing Chess and Dice were kept on costly carpet over the floor. Peacocks swung to and fro on golden cradles. Singing birds from silver cages broke the silence of the "Pramoda Śālā." Sometimes the royal couple would enjoy smilingly the talks of their favourite parrot.

The Palace garden could boast a beautiful "Samudra-gṛiha," *i.e.*, Summer Villa of polished sandstone with attractive panels on the surface of the picturesquely painted wall of the dancing hall in lotus pond. All the buildings of the Palace group, all the gardens and parks adjacent to and remote from palaces, were enclosed by a belt of stone wall which was about four miles and a half long and almost pentangular in plan.[1] It separated the Palace compound from outer city. On one corner of the Palace enclosure stood one Prison House of stone. From the roof of that structure, it is said, king Bimbisāra saw the Buddha on the summit of the "Gridhrakūṭa" hill when he was imprisoned therein by his son Ajātaśatru.

The striking remains of "Maṇiyār Maṭh,"[2] associated with the "Maṇi Nāga" of pre-historic significance, have been found in an excavation in the heart of the ancient city of Rājagṛiha. It is said that the royal treasure of some mythical king was stored in a well adjoining the "Maṭh," and the Nāga king "Maṇikāra Nāga" was enshrined there in order to guard the same. There is a tradition that the 32 queens of King Śreṇika (Bimbisāra) used to take their morning bath

[1] See Plate III, Fig. 6, South Gate (11 in Map).

[2] Do. Plate I, Fig. 1, Maṇiyār Maṭh (9 in Map).

there before going to worship the guardian deity. According to the Vinaya Mahāvagga, he had 500 queens.[1]

Remains have been found of stone-lined deep wells twelve in number. In plan the wells were 10 feet square each. Inside them royal treasures were deposited securedly. A long boulevard, called "Maṅgala-vīthi," usually circumscribed such ancient city within high walls. At the junctions of the "Vīthis" and "Mahā-pathas" generally stood tall "Dīpa-Stambhas," *i.e.*, masonry pillars which supported burning torches in dark but not in moonlit nights.

Along the main streets "Chaityas," "Āyurveda" Hospitals, Nurses' quarters, Alms Houses, Rest Houses, Guest Houses, Gāndharva Vidyālayas (Schools of Music) and other structures including veterinary establishments rested among thick groves and spacious gardens. "Havelis," *i.e.*, pavillioned wells built of large-size burnt bricks and covered by gabled roofs, as well as large tanks, existed there. The beaten path of the compound garden, running across the main entrance of the Rest House, flanked on either side by one range of rooms and verandahs both in the front and back, led into a spacious courtyard abutting which were to be seen living rooms, common room for discussion, cooking ranges, etc. Generally, verandahs connected most of the rooms with courtyard. One temple, adjoining a deep well and masonry reservoir, usually occupied a portion of the courtyard. Elephants, camels and ponies belonging to the travellers were accommodated in the stone-paved or brick-nogged courtyard open to sky. The chariots and carts were kept outside. During the times the travellers would stay in the Rest House, their animals would remain there.

The houses in the suburb were built of brick and lime or mud masonry, the deep red bricks being close-jointed and rubbed smooth. They had lime-terraced floors carefully finished with a punning of

[1] See Plate II, Fig. 4, Stucco Figures at Maṇiyār Maṭh.

molasses, cocoanut jaggery, pulp of "haritakī" (myrobalan), etc. The unostentatiously simple carved pillars of seasoned wood dotted along the lean-to verandahs. Their timber-framed, gabled or vaulted roofs were sometimes covered with copper sheets on thick planks. Adequately strengthened and beautified by circular buttresses at the corners as they were, the structures and gardens studded and adorned the principal thoroughfares. And they mostly stood close to tanks or wells. Adjoining them were shops for food stuff and other provisions.

All the stone-paved streets used by elephants, camel-driven chariots, carts or ambulance, as well as concrete-beaten or gravel-terraced lanes, were protected by neatly-worked-out cusped doors at their extremeties. Those doors which were useful as wicket-gates of the city enclosure were guarded by armed gate-keepers who lived in the adjacent "goomtees," *i.e.*, rooms for sentries. Important gate-buildings provided quarters for several gate-keepers in each. And all the streets, royal roads and even bye-lanes had side-drains of stone masonry. The drains were constructed with easy gradients and were covered by heavy slabs of stone. In all probability there were manholes for periodical cleansing. Branch drains from adjacent houses connected the road-side ones of larger capacity. Spacious parking platforms were allotted in places to accommodate congregation of thousands of bullock carts and caravans at a time, belonging to traders from neighbouring and remote provinces. The merchant prince Anāthpiṇḍika was one such trader. He possessed hundreds of various vehicles. Wheels of the conveyances were made of thick, heavy planks rounded and joined together with a nave-hole in the middle of each. Creaking sound almost deafened the ears of the neighbouring peoples as the carts and waggons passed along. Huge stone troughs (drona) were placed at intervals and filled with water to allow the bullocks and other domestic animals to drink from. Stone culverts, bridges of sal wood

on stone piers and aqueducts were provided in the gentle undulations of Rājagṛiha.

Outside the compound wall of the Palace and inside the city proper, as far as the city wall, one could see consecutive rows of twelve, ten, nine, seven, five, three, double and single-storied houses and edifices, in wood and stone in between gardens and clumps. The compound garden of "harmya" was enclosed by wooden fence or stone wall. Some of them with crude workmanship were severe and simple.[1] Their windows were designed and built in the forms of "Gavākṣas," *i.e.*, big holes pierced high up into the walls in the shape of bull's eye. Yet they were resplendent with colours and harmony. Strength and elegance dominated the architecture of Jarāsandha's Girivraja. There was a seven-storied structure (Sattabhūmaka-pāsāda) with characteristic gates owned by Sratthappakāsini. The structures gradually and continuously diminished in density as they receded from the centre of the city. The allocation of different citizens according to their official and social ranks, castes and creeds and the different types of structures, befitting their positions, with different heights and dimensions, created a delightful panorama in picturesque confusion which nowhere became flat or monotonous.[2] Many edifices contained six or eight feet thick walls, pillared halls around inner rectangular courtyards, wooden, colonnaded verandahs in their fronts, porches, niches and symmetrically curved corners. Certain bigger structures of noblemen and merchant princes appeared overwhelmingly conspicuous with turrets, high and circular towers at corners and along gates, also battlemented parapets that looked like the crenellated parapet of lotus-leaf pattern. Lotus designs were curved on spandrils of stone arches and on roughly dressed

[1] See Plate IV, Fig. 7, Ancient Indian City.
[2] Do. Fig. 8, Ancient India: Rural Architecture.

granite lintels covering openings for doors and windows. Roofs were built of granite slabs or other local stones, placed very close to one another and were sometimes supported by stone architraves and shafts with simple caps and bases. There were also roofs made of close-jointed bricks, 18″ × 15″ × 3″, rubbed so smooth that the fine mortar joints were seldom noticeable. Walls were covered with shell lime plaster, richly polished and gorgeously painted in places. Coloured tiles, floral terracotta, coloured glass, metalled medallions, even leaves of gold and silver, were utilized in decorating the chambers of wealthy citizens. Inner chambers and bed rooms were divided into three classes—Śivikā-garbha (square hall), Nālikā-garbha (rectangular hall) and Harmya-garbha (large dining hall).

Spacious plots planted with gardens containing medicinal herbs, orchards, tanks, wells, fountains, etc., beautified the compounds of the edifices. Kitchen gardens were attached to the blocks belonging to the ladies particularly. In the gardens which were reserved for ladies were to be seen shrines for family deities. And each and every house of a Brahman contained a "Yajña-śālā" as well as one covered platform for feeding Brahmans and guests. Since nuptial ceremony the sacred fire would be kept continuously burning till the death of the husband. Both husband and wife put oblations therein three times a day. Dwellings were furnished with spinning wheels, spindles and hand-looms. Female members wove "khādi" and woolen cloths for family consumption.

Caste-system was observed by even the earliest Indo-Aryans. In ancient literature of India including the Dharma-sūtras (5th century B.C.), Dharmaśāstras (2nd century B.C.) and Kāmaśāstra it is noticeable how the Indian society was based upon fourfold classification of the people into "Varṇas" (colours) and the fourfold division of each individual life into "āśramas" (stages). Daily sacrificial rites formed a very important ritual in Brahmanical

faith. Constructing a "yajñaśālā," *i.e.*, a fire-place with one chimney at the top for the escape of smoke, in any part of the city or suburb, for the benefit of the public, would be considered as much meritorious a work as the erection and consecration of a temple, or excavation of a tank or well, planting a tree, providing a park or building a bridge. The Kshatriyas as military people protected others from violence and maintained civic discipline. The Vaiśyas were responsible for conducting trade and commerce, rearing cattle and controlling agriculture. The Śūdras generally professed as artisans and craftsmen. Also they identified themselves with the professions of Mālākāra (garland-maker), Gandhika (perfumer), Rajaka and Nilikusumbharañjaka (dyer and cleaner of clothes and garments), Nāpita (barbar), Śauṇḍika (Vendor of liquors), Tāmbulika (seller of betel-leaves), Suvarṇakāra (Gold-smith), Manikāra (Jeweller), Vaikaṭika (diamond-cutter), Audayāntrika (worker fabricating hydraulic engine or water-clock), Naṭa or Kuśilava (actor), Gāyaka (singer), Nartaka (dancer), Vādaka (musician), etc. There were females skilled in arts as "Śilpakārikā," Naṭī or Nāṭakiyā, Kalāvidagdhā, etc. To watch possible secret love intrigues of female members Kañcukiyā (female overseer) and Mahattarikā (female superintendent) were maintained in the apartments of queens and wives of the merchant princes.

The religious, social, political and economic life of ancient India rested on a bed rock of co-operation. The first two aspects of such corporate life were manifested in the 'Saṁgha', *i.e.*, community of the Buddhist monks and 'Jāti,' *i.e.*, caste and the last two in 'Gaṇa,' *i.e.*, political corporation and 'Śreṇi,' *i.e.*, Guild.

Moksha (Salvation, *i.e.*, Nirvāṇa) was coveted by all the four castes. The path of knowledge (Jñāna-mārga) was sought by the intellectual Brahman and Kshatriya for the attainment of Moksha. The path of works and service (Karma-mārga) was assigned for architect, artist, artisan, merchant and the labouring class in general for identical

purpose. The path of faith and devotion (Bhakti-mārga) was open to all castes whose loving hearts longed for communion with God.

Ladies of those days used to take important parts in social and religious affairs. They took parts in large scale sacrificial rites (Yajña) and also in public or private festivities. Those occasions—specially garden parties and picnics, or "Goshṭhīs" (social gatherings)—would afford opportunities to young men and girls for choosing partners for life. The knowledge of fine arts was considered compulsory for the training of all women. A poor woman or widow used to earn her livelihood through works of art. Royal grants encouraged the artists.

One could see in the "Chawks" attractive stalls of fruits and flowers, shops of various provisions, grocery, stationery, condiments, toilet and perfumery, "saugandhika-puṭikā" (scent boxes), incense-burner vessels for perfuming dresses and ladies' hair, ornaments, costumes, utensils and objects of art, dolls, toys, linen goods, cotton fabrics, embroidered silk, etc. He could see restaurants for meat-eating and drinking, houses for dancing and music, apartments for courtesans as well as saloons and chambers for massage, shampooing, nail-dressing and nail-dyeing to which the malefolk paid particular attention. Each shop-owner had to take license.

Large vessels and jars, plates and boxes made of stone, metal and wood, highly glazed and unglazed potteries embossed with black and red stripped ornamental designs, as well as baskets and light furniture made of tough grass, bamboo chips and cane, were arranged in rows and filled with articles of domestic utility, eatables and sandal-wood wines, for sale to the public in exchange of grains or coins like "kārṣāpaṇa," "kāhāpaṇa," "hiraṇya," "paṇa" and "nishka." Light vessels were hung from rope-brackets (śikyas). Curd and wine were stored in skin-vessels. 'Soma' juice was kept in wooden and stone bowls decorated with ornamental carvings.

Certain streets allowed " gavākṣas," (windows) on the first and upper floors only. Stalls for vendors arranged harmoniously in rows, honey-combed against the solid walls. The streets, "vīthis," " mahallās " and " chawks " were named according to business transacted therein and castes of occupiers, *i.e.*, according to trade-guilds which were eighteen in number. Particular streets and quarters were inhabited by one group and the same class of artisans. Types of somewhat similar " mahallās ", *i.e.*, quarters and " chawks " are noticed at Kāśi, Gayā, Ujjain, Nāsik, Madurā, Udaipur, Jaiselmer and Kathamandu. After the setting of the sun, several " vīthis " and " mahāpathas " would be transformed into night-clubs and gambling houses for enjoyment of the youthful, jolly " nāgarakas." Portions of the pavements would be crowded with betel-chewing and merry-making, sandal-pasted citizens bedecked with flower-garlands, coloured, embroidered costumes and gold ornaments, silken head dresses, jewel-crested turbans and wooden sandals as are noticeable in the Sudhammā Palace relief of Bharhut of the Second Century B.C. and in Sanchi reliefs reproduced in this volume. They chatted in a musical language that was a combination of Sanskrit and Prākṛit. A cosmopolitan assemblage of merchants, traders, moneylenders, herdsmen and visiting noblemen added to the charm of Rājagṛiha at night, lighted by torches and oil lamps. All the revelry and devilry of the drunken club-members would at times end into an alarming confusion by a mad elephant rushing through the streets, charging wayfarers and over-turning stalls recklessly. Ladies of neighbouring houses would go up to the balconies to see the event and sound horns and conch-shells in order to alert the citizens. Alarm would be signalled by beacon-fires. Such a scene is mentioned in the " Mṛchhakaṭika " and a like event carved on a bas relief of Amarāvatee.[1]

[1] Plate V, Fig. 9, Elephants run amuck.

A band of athletes, maintained by the king's establishment, with spears and other arms, would run for overpowering and arresting the elephant. They " were endowed with huge, lion-like bodies of great prowess, broad chests and shoulders, long and massive arms, with fantastic marks of tattoo, thick necks and very slim or wasp-waists."

A large section of " gaṇikās " (public women) of ancient India by virtue of their intellectual accomplishments and skill in the fine arts of sculpture-making, painting, music, dance, theatrical performance, etc., occupied influential rank in society. Their association was sought in social and religious functions as well as in royal processions. When king Ajātaśatru went to pay his homage to Gautama Buddha who was then staying at the Jīvaka Āmravana Vihāra in Rājagṛiha, a large procession accompanied him. Numerous " gaṇikās " in their best apparel enriched with brocades, embroidered with threads of gold or silver made by the wives of goldsmiths and silversmiths, armlets, anklets, ear-rings, necklaces, pearls, beads and jewels were carried on elephants of state. They sounded conch-shells, played instrumental music and sang " gāthās " in honour of the Buddha in his presence.

The king with his spy, noblemen and " vidūṣaka " would visit their residences and attend musical soirees, sitting on a gold-embroidered cushion in a costly couch, resting his feet on a cushion-covered foot-stool. The merry life depicted in the Vātsyan of the later Age supplemented the ideal life coveted by the peoples of the much earlier Age of Rājagṛiha. In their habits of life the three elements of " Dharma," " Artha," and " Kāma," as prescribed in the Śastras blended together harmoniously. Many of the ganikas were temperate in habits, highly cultured, virtuous and religious. They patronised artists and craftsmen by commissioning their services in constructing their temples and " chaityas " and in decorating and furnishing their residences and garden-houses. Sanskrit dramas and Pali literature mention about such gifted women. They were regarded as royal property.

Ambapālikā, Vasantasenā, Vāsavadattā and Kāmandakī were among them. They freely mixed with the ladies of aristocratic families and common citizens in "goshṭhī" (social gathering) and "udyānayātrā" (garden party), discussed on religious and spiritual matters and entertained them with their music and dance, sometimes with "akkhāna", *i.e.*, dramatic performance. It is also known that acrobatic and magical feats were generally included in the programme. Attracted by the qualities of her head and heart, by her cultural attainment and mastery in the 64 kalās (arts) and above all, by the charming disposition of the wealthy "gaṇikā" of Vaiśāli, Ambapālikā, one rich and influential Vaiśya of Rājagṛiha persuaded king Bimbisāra to organise and maintain an institution of "gaṇikā" after the ideal perpetuated by the most accomplished Beauty of the Lichhavi clan. Even the Buddha subsequently pertook the meal offered by Śrimatī Ambapālikā at her own residence in company with his disciples. It should be noted that the Buddha did not exclude the "gaṇikās" from his religious fold.

Rājagṛiha possessed many pleasure grounds with their "wonderfully engineered ornamental towers" such as the "Palace of the Wind" and "Vādala Vilāsa". Social gatherings were plentiful. There were special lawns and groves for conducting "udyāna yātrās," *i.e.*, garden parties. All over Rājagṛiha there were places specially set apart for ladies to conduct dancing and theatrical performances "Vadhu-nāṭaka-Saṃghaiścha sañyuktām sarvato purīm." Banyan, Bamboo, Mango, "Lodhra," "Pippala," Tamāla, Palmyra, Vakula, Mādhavī and Champaka groves with lotus-pools and lily-ponds were in abundance. On the bank of the then famous tank "Sumāgadha" a "Moranivāpa" (Peacocks' Feeding Ground) was well maintained. The city and suburb were watered by the tributaries of the Saraswati, hot-water Tapodas, Pañchānā, Godāvarī, Gomatī and other streamlets besides numerous tanks and hot-springs. As mentioned before, the city was bounded

according to the Pali Isigili Sutta by five hills named Ṛishigiri, Vaibhāra, Pāṇḍava, Vaipulya and Gṛidhrakūṭa, with lovely peaks and colourful foliage. In the present time they are known as Sonagiri, Vaibhāra, Vipula, Ratnagiri and Udaigiri.[1] It is said that the Pāṇḍava brothers enjoyed the charm and splendour of Girivraja from the top of a hill prior to their entering the city through its massive gate of chiselled stone furnished with very heavy iron bar and sockets made in local factories.

The drainage of the capital city, connected as it was with palaces and groups of residences, was skilfully discharged along stone-pipes, stone water-channels and iron sluice-gates, into the wide ditch outside the city walls The ditch, in its turn, regulated by gigantic sluice-gates made of sal and iron, thoroughly irrigated the wide fields beyond. Those fields became very rich with fertile zones of rice and corn. And they were watered by streams also, which descended from the hills of Rājagṛiha. Close to the ancient capital they were very picturesquely covered by fragrant reed grasses from which the popular name " Kuśāgrapura " was derived. To add to the charm of the landscape, and to make the water-course not easily approachable by the enemies, the ditch was circumscribed by a thick girdle of elephant-grass. Injury to grass was considered as offence.

In the western plateau beyond the south-western gate of " Kuśāgrapura " between the Vaibhāra and Sonagiri hills, known as " Ranbhum," the great Bhīma-Jarāsandha battle mentioned in the Mahābhārata is popularly believed to have been fought.[2] At the Western foot of the Sonagiri, a ridge is identified as the wrestling ground of Bhīma and Jarāsandha. The shrine of " Jwala Devi " (Durga), the guardian deity of Rājagṛiha, stood at the north entrance of the inner city between the Vaibhāra and Vipula on the East bank

[1] Map of Rājagṛiha, I to V.
[2] Do. Do. 10.

of the Gomatī.[1] The shrine stands there to-day. About a mile to the North-West of the North gate and in the West of New Rājgir was a famous burning-ghat of pre-historic antiquity.[2] "Chaṇḍālas" lived there. They used clay baagles, copper pendants, bone necklaces and clothings made of bark and animal skin.

A ground for execution of criminals condemned to death existed at the Southern end of the burning-ghat. And between the ghat and the shrine of Jwala-Devi there was a junction of four roads. With the belief to drive away ill luck or illness from his or her own person a citizen would come there at the dawn of the day, performed a "pūjā" to the Devi by offering vermillion paint, turmeric, rice and flower. Any passer-by who would unconsciously tread upon those articles left after "pūjā" would attract to himself or herself the ill luck or illness of the worshipper. "Jalhādas," heretics and slaves resided there.

Achalagāma, a neighbouring jungle village, maintained two shrines of Sūrya and Chandra. Their worship was conducted according to the Vedic rites. Rest houses, wells, "vāpis" (tanks), "prapās" (centres for distributing drinking water), houses, shops, store-yards, monastic institutions for education, "Gāndharva-śālās" (Schools of Music), Astrologer's, Incantator's, Omen-reader's, Serpent-worshipper's and Magician's bureaus nestled among the jungles on either sides of a pucca road to the temples. All the above existed before the birth of the Buddha. Military outposts guarded every approach to the city. Ruins of some of them can be seen on the hills forming the outer defences of Rājagṛiha.

The physical aspects of the countryside ensured a strong natural defence for the capital. A strong fortification as mentioned above was mechanically introduced in addition. Even the long lines of roadways stretching towards the suburb, which contained 80,000 villages,

1 Map of Rājagriha, 7 and 16.
2 Do. Do. 17.

governed by King Bimbisāra and mentioned in the Mahāvagga, were protected by mighty walls of uncoursed rubble masonry on either sides. Even to this day one such royal road is known as "Bimbisāra Road." Halfway between Rājagṛiha and Nālandā was situated the famous garden house recorded as "Ambalaṭṭhika" of Bimbisāra. It was very close to a prosperous Brahman village where a Vedic institution was run on a grand scale on a valuable land granted by King Bimbisāra himself. The establishment enjoyed royal endowments.

Secret communication was controlled between the palaces and the suburb. The underground vaults of the royal palaces sheltered hidden paths. Certain pillars held subterranean passages concealed for escape. All these connected the outskirts of Rājagṛiha in distant regions interspersed with deep forests and quasi-fortresses. Nevertheless, the environment was calm and contemplative. It was a playground of Nature.

The ravines, caves and hill-sides of Rājagṛiha with an abundance of rivulets, springs and waterfalls including the Gomatī, Godāvarī, Satadhārā and a dense luxuriant foliage, held hermitages of teachers of repute of various denominations who formed the greatest attraction for the prince Siddhārtha who walked all the way from Kapilavastu to the famous hill-girded capital of Magadha. On the five sacred hills nestled the peaceful cottages of "Siddhas," the cave dwellings of high-souled "Munis" and the abodes of "Gandharvas" and "Nāgas." In one artificial cell known as "Pippala Cave," behind the "Jarāsandha-kā-Baithak," the Buddha used to sit in meditation after his midday meal. Later on Mahākaśyapa resided in the identical cave (Stone House). The House is claimed as the earliest structural construction of the age in India. Mountain pigeons, with their "bodies blue as the firmament and eyes like ruddy pearls," dwelt in the deep cavern of a precipitous hill-side which was aptly called as "Kapotakandara."

King Bimbisāra, eventually, abandoned the old capital Rājagriha (Kuśāgrapura) situated within the valley of the Five Hills and founded New Rājgir, shown in map as Ruined Fort, outside the northern entrance of the old city, in an undulating plain, about two-thirds of a mile therefrom. New Rajgir attained its pinnacle of prosperity during the reign of the succeeding king Ajātaśatru, 491 *circa* 459 B.C. He increasingly strengthened the fortress and the city proper.[1] With its rude structures of crude artistry New Rajgir shone as a symbol of the Buddhistic faith which dominated the early ages of Buddhistic austerity and penance, of mountain solititude, and of the constant contemplation which consummated in "Nirvāṇa." Ajātaśatru conquered the kingdoms of Kāśi, Kośala and Videha. His descendant (son?), King Udāyin or Udāyibhadra, c. 454-427 B.C., subsequently transferred the capital to Pāṭaliputra, being attracted by the facility for communication which the rich river system of the countryside afforded.

PĀṬALIPUTRA

Soon Pāṭaliputra appeared to be an embodiment of the centralisation of the social and economic adjustments of the self-governing village communities. It encompassed an aggregation of villages networked by numerous groves, spacious parks, "Kshira Vriksha" (Milky-tree) and flower-bearing trees forming avenues and overlooking the confluence of the rivers Sôn and the Ganges. It transformed into a zone of commercial ("Nigama") and cultural activity manned by various classes of energetic people. The "Telis" (Tilapishakas, *i.e.*, oil-dealers) controlled the entire trade of Pāṭaliputra. They ranked higher than the majority of the merchant community and administered the social life of the city.

[1] Map of Rājagriha, 6.

Villages grew up as self-sufficient republics and maintained prosperity of the people in spite of political changes through fall of empires. Guilds and industrial units remained more or less autonomous. Sanitation and communication became exemplary. Every one remained engaged on work. Able-bodied beggars and vagabonds were punished by Law.

There were large villages, like "Mahāvaḍḍhakigāma" and "Kammāragāma" each of which contained about one thousand families of wood-carvers and smiths, with the institutions of "Jeṭṭhakas," *i.e.*, Aldermen among the artisans. They carried hereditary professions as other guilds would do. They kept their own armies. In times of need village armies would fight for their king.

Planned on a gigantic scale, the capital of the Maurya empire, as the Greek ambassador Megasthenes described in the fourth century B.C., was the greatest city in India situated at a confluence where the streams of the Erannoboas (Sôn) and the Ganges unite. It stretched 10 miles long and 2 miles broad. One ditch 600 feet wide and 45 feet deep encompassed it all round. It was connected with the river by a number of gates. The long city wall was high and massive. It was crowned by 570 towers and it accommodated 64 gates. From towers heavy stones and melted iron were thrown on invaders. Every important gate opened into a big drawbridge spanning the ditch, so mechanically devised that an enemy setting his feet on the same could be thrown into the ditch full of crocodiles. There were smaller doors between the main gates. Three brick-lined moats were excavated in quick succession along huge timber walls. The royal palace occupied a central position, built in a fine wooden park laid out with "manosilāpaṭṭas" (masonry platforms), fountains and lotus ponds with gold fish. It was "more splendid than those of Susa and Ecbatana." Its pillars were plated with gold and it was magnificently furnished with throne and chairs

of state and great vessels of gold, silver and copper set with precious stones.[1]

Although villages and its head-men have often been mentioned in the Ṛig-Veda, it is assumed that prosperous cities flourished in India in remote days. Later Vedic literature dwelt on such cities. The Mānava Gṛihyasūtra records the existence of "Grāma" and "Nagara." The Dharma-sūtras and Dharma-Śāstras frequently refer to "gaṇa" and "pūga" which denote town and village corporations. There were city and village Assembly Halls to conduct judicial and corporate functions. Baudhāyana warned people who sought spiritual attainment against living in cities because of their being polluted with vices and dishonesty. Pāṇini (sixth century B.C.) referred to cities and city-life. Megasthenes referred to splendid municipal organisation and administration of civic governments in ancient India. The Jātakas and Pāli texts supply vivid description of large, prosperous cities. All important places of pilgrimage sacred to Brahman, Buddhist and Jain offered scopes for the development of both artistic and commercial life. The Buddhacarita and Lalitavistara have rendered excellent accounts of such prosperous townships. It can, however, be assumed that the progress and civilisation of Magadha were not entirely confined to Rājagṛiha and Pāṭaliputra. Its villages and country sides with their developed system of agriculture, commerce and monastic education had a great influence on its growth and prosperity, cultural and material. Its civilization was obviously a rural one. Civic organisation and Municipal administration looked into every aspect of life and living, and took charge of the property of foreigners and their safety. Animals were treated with all care. Relief of the poor was regarded as royal duty. Medical men and nurses were sent with food and medicine to the fighting lines. They tended the

[1] See Plates VI and VII—Pāṭaliputra Excavation Ash Funnel, Wooden Platform, Mauryan Pillar and Terracotta Plaque.

wounded. One Controlling Board fixed wages of labourers and prices of foodstuffs and materials. Artisans and artists enjoyed special protection.

From literary evidences, supplied by ancient Indian literature, one may find that arts and crafts flourished in Magadha long before the birth of Christ. Pavilions, attached to the arenas where wrestling matches or chariot-races were conducted, would accommodate visitors from different guilds. The pavilions were decorated with festoons and "banners bearing upon them implements and emblems of several crafts." Vātsyāyana's "nāgaraka" was proficient in literary pursuits as well as in the practice of Fine Arts. An ideal "nāgaraka" was he who was healthy, learned and eloquent, poet and a skilful story-teller, magician, musician and had a deep, practical knowledge of histrionic and Fine Arts besides being an archer, swimmer, appraiser and rider of animals, ventriloquist, etc. A master of fine arts and crafts would command respect of every body and easily win the heart of an aristocratic girl for marriage. Nāṭya-śāstra was cultivated in pre-historic India.

The Lalitavistara mentions how king Śuddhodhana desired for his son Siddhārtha a bride who was learned in the "śāstras" and was as accomplished in the 64 kalās as a "Gaṇikā." And Siddhārtha himself had to satisfy Daṇḍapāṇi Śakya, father of Gopā, with his skill in the "Śilpas" and various other items before Gopā was given in marriage to him.

Pictorial art was cultivated and patronised by the aristocracy as well as by the common folk of the Age to a very high degree. Every cultured citizen did maintain one set of implements for drawing and painting. The disappointed daughters of Māra proclaimed that it was far easier to paint pictures in the sky than to tempt Bodhisattva. A most favourite item in the art treasure of the house-holder was a roll of canvas containing panels of pictures depicting a short story. It was called "ākhyānakapaṭa." Jātaka-stories on the life of Buddha were carved on stone, in low reliefs, probably, on the same traditional

principles. Such story-telling "paṭas," on paper, canvas or plank, are still to be seen in Bengal villages and in rural Rajputana. Life-size statues (pratimās) in wood, stone and plaster were kept on stands in the houses of "nāgarakas" as well as in the chambers of kings and nobles. Dolls, toy-animals and small furniture for children were made of wood, stone, horn, ivory, cloth, wax, plaster or clay. The Drawing Room of one wealthy Vaiśya or "Vanik" appeared as a museum with objects of fine arts, crafts and metal industry including bell-metal, bronze and precious stones.

All the peoples of the age who enlarged their faculty of learning, or excelled in the skill of fine arts and crafts, flocked to towns where they found ready patronage from royal houses, or "Śeths" and "Sāukārs." A special department consisting of 3 "amātyas" (ministers) under the Central Government, according to Kauṭilya, was maintained to look after the interests of the artisans (kārukarakṣaṇa). They secured employments at the clubs or associations of citizens or under prosperous trade-guilds. Certain artists functioned as travelling instructors. Certain artisans and artists were maintained by wealthy "nāgarakas" as their companions and confidential friends whose advice was always sought on all matters public or private. They were popularly known as "vidūṣakas," *i.e.*, professional jesters and humourists. Many Sanskrit dramas were enlivened by "Vidūṣakas."

A Chinese work called Nan-tśi-shu compiled about the beginning of the 5th century A. D. refers to a story how Kauṇḍinya founded a Brahmanic colony in Indo-China in the 1st or 2nd century A. D. and how it grew up into a great centre of foreign trade in that part of the continent, carrying on an ever-increasing maritime trade with China. Scholars think that the above Chinese work is based on the accounts of Chinese ambassadors who visited Fu-nan (Cambodia) about the middle of the 3rd century A. D. Kauṇḍinya is said to have over-powered the savage queen of the country (who did not know how to

wear cloth), tried to civilize her and then married her. Aśoka's inscriptions give an idea that India had been intimately connected for a long time with Asia Minor and the neighbouring West. The Kushans opened trade-routes to the East and the West. In the 2nd century B. C., the Kushan emperor "Mahārāja-Rājātirāja-Devaputra-Kaisara" Kaniṣka introduced a currency of his own so thoughtfully designed as to afford facility of exchange to the Indian merchants trading with the neighbouring West. The Kushan coins were designed in a composite, rather international, style of Indian, Greek and Zoroastrian techniques and icons. Some of them have Buddha on one side and Jupiter on the other, and have legends in Greek, Iranian or Indian vernaculars and in varied scripts Brahmi, Greek or Kharoṣṭhī.

Affinity with Indus Valley Culture

In the 4th century B. C. Avantī (Malwa) with its capital Ujjayinī formed an integral part of the Magadha empire. It was situated on the highway of the latter's commercial enterprise with Egypt and Babylon through Broach and Sūrpāraka, *i.e.*, Sopara (near Bombay), while Magadha's communication with the outer world by land-route passed through Gāndhāra.

It is believed that through Gāndhāra and Malwa, Magadha had connections with the earlier pre-Vedic civilisation of the Indus Valley extending from Sind to the Punjab. Excavations at Pāṭaliputra, Rājagṛiha and elsewhere in Magadha of the old have very seldom exposed any antiquity which can distinctly be termed Vedic, Buddhistic or Jain. On the other hand, the finds include a large number of terracotta female figurines, male terracotta and demoniac figurines and animal models. The figurines suggest that the cult of Śakti with the worship of Śiva and Śakti (Mātrikā) prevailed in Magadha also in the same way as those among the finds of Mohen-jo-Daro and Harappa

indicate. Even though certain minor figures and female deities like Diti, Aditi (Ambikā) and Pṛithvī of the Vedic pantheon have been unearthed in the excavations of Magadha it has been proved conclusively that non-Vedic pre-Aryan elements, descendants of the primitive people of the Palaeolithic and the Neolithic Ages, abounded in and dominated that remote age of Magadha. The æsthetic sense of those primitive people was the resultant of their contemplative vision, their power of comprehension and generalisation, in abstract designs, and their study of the grace and beauty of Nature's forms which they conceived with romantic imagination. Their artistic and idealistic yet realistic power of observation found eloquent expressions in the masterpieces of animal studies they painted on rock faces. The rail in front of the great cave in Kanheri (Salsette) of a later age was carved with the design of forceful animal figures of somewhat the same refinement and vigour as are noticed in those primitive paintings. With the progress of the pre-Aryan Magadha empire, prominent kingships of the Vedic significance gradually dwindled. In spite of the amalgamation with the Vedic culture and the practising of the Vedic religious rites by local priests and Kshatriyas, Buddhism and Jainism, which did not encourage caste distinctions and sacrificial rituals, gradually overthrew the supremacy of the Vedic Aryans with the increasing strength of the Vaiśyas and Kshatriyas which branches of the Hindu society, even in modern times, are dominating the thought and action of the peoples of the countryside. Animism and Śaktism controlled the bulk of the Magadhis as they did with the people of the Indus Valley 5000 years ago. Every hill, every river, every tree, every household and individual had protective deities (Ārakṣa Devatā). The Mahābhārata mentions about two Nāgas, Maṇi Nāga and Svastika, in Girivraja. The Maniyār Maṭh, excavated by the Archæological Department, is said to be the shrine of the same Maṇi Nāga in the heart of Rājagṛiha. But its architecture indicates later construction. The Yaksha named

Sivaka guarded the Sitavana. The Yaksha-chief Kumbhīra dwelt on Mount Vipula. The Gandharva Chief Yudhistira controlled one forest.

The symbolism of "Aśvattha" (Bodhi Tree) found a poetic expression in a Vedic hymn in the first Maṇḍala of the Ṛig Veda as well as in the earthen seals unearthed at Mohen-jo-Daro of 3000 B.C.

Mahāvīra and Gautama Buddha

In the middle of the 6th century B.C. there appeared in Magadha two very great religious and spiritual leaders,—Vardhamāna Mahāvīra and Gautama Buddha as champions against the so-called hierarchy of Brahmanism and the arbitrary authority of the Vedas, Vedic sacrifices, particularly animal sacrifices, and Vedic caste distinction.

Mahāvīra, a Kshatriya related to Bimbisāra, was born in a suburb of Vaiśālī in the 6th century B.C., renounced worldly life at the age of thirty, and attained perfection in Pāvāpuri, about 7 miles south of Bihar, after strict penance and meditation for twelve years,. In Rājagṛiha and Nālandā he found rich house-holders as his followers like Vijaya, Ānanda, Sudarśana and Bahula. Gośāla, the chief of the Ājīvikas met him in Rājagṛiha. He spent fourteen rainy seasons in Rājagṛiha.

Side by side with him Buddha preached his religion. A descendant of the solar Śākya king, born in the garden of Lumbinī near the city of Kapilavastu in 567 B.C., the Śākyasiṃha left his summer palace at the age of 29, went to Rājagṛiha, received religious instructions and learned the practice of "yoga" from two renowned Brahman ascetics named Āḷāra Kālāma and Uddaka Rāmaputta and thence to Uruvelā (Bodh Gayā) where he acquired Buddhahood (Wisdom) under the famous Bodhi Tree.

After the Enlightenment he went to Sārnāth (Benares) and proclaimed the "Dhamma" at the Deer Park. Thence he went to Rājagṛiha. He converted Magadha to his own faith. His disciples included the three great leaders of the Jaṭilas, *i.e.*, Brahmanical "Vānaprasthas" named Uruvelā Kassapa, Nadī Kassapa and Gayā Kassapa with their thousand Jaṭila followers. Bimbisāra and his queen Kshemā, their royal officers, noblemen, aldermen, bankers, traders, husbandmen and the public including artisans, physicians, courtiers, 'daivajñas', *i.e.*, astrologers, and courtezans, even Brahmans, joined his mission. At Rājagṛiha one messenger from his homeland Kapilavastu came to persuade the Buddha to revisit the place of his Nativity. Sudatta-Anāthpiṇḍika, the richest banker of Śrāvasti met the Buddha at Rājagṛiha and invited him with all his disciples to visit Śrāvasti. His foster-mother (Mahāpajāpati Gotami), his wife (Yasodharā) and several ladies having been admitted into his order, Somā, the daughter of the court Pandit of Bimbisāra, also joined his mission. Subsequently she attained Arahantship. Mālatī Mādhava and other works record what a great influence such talented Bhikkunis exerted on the society of the age.

The Śākyasiṃha's favourite resorts in Rājagṛiha were "Veṇuvana" (Bamboo Grove) near the hot springs and "Gṛidhrakūṭa" Hill (Vulture's Peak). The "Kāraṇḍa Veṇuvana Vihāra" was consecrated to the Buddha by King Bimbisāra. The garden was watered by a mountain stream and also by the perennial springs from Vaibhāragiri. The famous "Kāraṇḍa-hrada" adjoined the Vihāra.

After preaching his religion for about 45 years he attained "Parinirvāṇa" in 487 B.C. It was the historical conversion of the powerful Nāga dynasty, which had constantly fought with the Aryans for supremacy, that placed Buddhism on a secure basis in India. And it was the emperor Aśoka, who eventually made Buddhism a state religion in India.

Greek Invasion: Influence on Indian Arts

The invasion of Alexander the Great in 327 B.C. in the North Western Provinces and the Punjab influenced Indian culture in general. That influence resulted in a remarkable, composite style of Græco-Indian Art and Architecture. Examples of such Indo-Greek, *i.e.*, Gāndhāra style abounded in the North Western India and Central Asia. It only penetrated to a very limited extent into other parts of India, although its influence is observable in various ways. Chandragupta Maurya successfully checked the Greek invasion and established a kingdom of his own which extended from Afghanistan to the Gangaridæ (Gangetic delta). In this act he was inspired and guided by his illustrious Brahman minister Kauṭilya (Chāṇakya). The art of Town Planning which found distinction in ancient Rājagṛiha, was considerably developed with the splendid civic reform and municipal administration of Pāṭaliputra by Chāṇakya. After a long and progressive administration of Magadha, Chandragupta is said to have embraced Jainism, undertook austere penance and starved himself to death at Śravana Belgolā, the sacred place of Jain pilgrimage in the province of Mysore. Aśoka was the grandson of Chandragupta.

Maritime Activity in Ancient India

The maritime activity and commercial enterprise in ancient India cannot be denied. Till the discovery of America India was geographically treated as the centre of the civilized world then known to the Occident. Indian ships sailed in the Persian Gulf in remote times. India used to despatch big vessels with merchandise to Egypt and Greece at the one end and to China at the other. By the seventh century before the birth of Christ Indian shipping became prosperous. The chief sea-ports were Bharu Kaccha (modern Broach) and Sūrpāraka (Sopara). During the Maurya period Indian shipping

developed remarkably and the Department of Navy was considered as one among the Six Departments of Defence. Rules and Regulations were laid down for realising taxes at ports. Aśoka stopped piracy in the Eastern Seas. His brother Mahendra started for Ceylon in a ship from a river ghat in Pāṭaliputra (Patna) which is still known there as Mahendra Ghat. "Nāvadhyakṣa" managed royal ferries and navy, policed sea-shore, collected "tolls," harbour dues, customs and income of fisheries.

Need for Extensive Archaeological Excavations in Magadha and Pāṭaliputra

Indian archæologists could not unearth such materials that could trace the successive art and architecture in India for about a period of 2,500 years, following the foundations of Mohen-jo-Daro, Harappa, Chanhu-Daro, etc., which cities in the Indus valley mark a civilisation of the Aeneolithic Age when copper and bronze appeared side by side with stone. Excavations, however, are being seriously conducted at Kauśāmbī, near Allahabad, that dates from 600 B.C. to about 500 A.D., and at Ahichhatra in Ramnagar near Bareilly which has been identified as the then flourishing capital of the North Pañchāla king Drupada, father of the great heroine of the Mahābhārata. It is believed by some that a counterpart of the said city did exist at an earlier Vedic period and continued till the Imperial Gupta Age, the importance of Ahichhatra being marked in the pages of the Mahābhārata.

Recently, in the course of excavating Ahichhatra, one splendid Gupta city with streets, narrow lanes and houses have been exposed that may be dated about the fifth century A.D. Ornate pottery, terracottas, sculptures and coins have been dug up. It is hoped that in course of subsequent excavations sufficient materials will be available there,

and elsewhere in Magadha—particularly in Rājagṛiha if systematic excavations are conducted and continued—which will supply missing links between the cities of the Indus valley and those under excavation at Ahichhatra or to be excavated in Magadha. Seals, terracotta plaques, pottery and certain other objects of fine arts including the thoughtful copper statuette representing a nude dancing girl found in Mohen-jo-Daro with their refined techniques appear to correlate with the Buddhistic and Gupta arts in Magadha. If excavation is carried on properly and extensively, Rājagṛiha may appear to cherish in its bosom an invaluable mine of very ancient, pre-historic arts and crafts

As the accredited guardian of modern Indian aspirations, and as the proud protector of Indian culture, the Government of India should contribute funds ungrudgingly in order to enable extensive excavations in Rājagṛiha and in the surrounding country. Deeper trenches may reveal many treasures, heretofore unknown to the modern world, in order to help compilation of a more authentic and more complete, systematic history of Indian Fine Arts and Culture.

Aśoka's Creative Genius

Before the reign of Aśoka, "yajñaśālās" of the Vedic Aryans and "Stūpas" were constructed in wood, bamboo, thatch, mud, straw and brick. But Aśoka's creative genius replaced those perishable materials, devised and enforced scientific and stable constructions with strong, durable and uninflammable building materials like burnt bricks and dressed, even dexterously polished stones. Even in an earlier Age, the Buddha himself used to take an active interest in building constructions. It is recorded in the Chullavagga that the Buddha enjoined upon his devotees the supervision of building construction as one of the duties of the order. But although Aśoka changed the materials for building construction, still the sacramental character, design and form of the

Vedic constructions in wood were retained and imitated for many years by expert Buddhist architects and builders. Existing monuments of Buddhist cave-temples and stūpas exemplify such imitation. Aśoka brought about an entirely new departure in Indian building construction and tradition. It is said that he built 84,000 stūpas, many of them in brick and stone. He provided the "Saṁgha" with permanent Assembly Halls. It was during his time that the Indian craftsmen commenced gigantic rock-cut, cave-temples, stūpa-houses and monasteries in Eastern and Western India. In addition to encouraging local craftsmen and master-masons he employed many foreigners. Perso-Greek or Bactrian masons were among the many employed in Aśoka's public works department. There was cultural contact of the Indians with Egypt, Persia, Babylonia, Macedonia and Epirus. The whole of India was for the first and only time united under the banner of "Ahiṃsā." The Vedic barrier of untouchability was removed. The removal resulted in the upheaval of Indian Architecture and allied arts for which the "impure Vrātyas" were responsible. One cosmopolitan, international architecture pervaded all over the country. Architects, Painter-Artists and Sculptors were enlisted in religious ministration. Consequently the successive Śuṅga, Gupta and Pāla kings in Magadha had a much wider choice of efficient artists for the royal services than what their predecessors, the pre-Buddhistic Indian monarchs, had and the art of architecture rose to a very high level of excellence. Bengal drew her impulse from Pāṭaliputra, then a great centre of commerce, engineering, art and culture.

The Mahābodhi Temple

The bas-relief of Bharhut of the 2nd century B.C. represents the Old Diamond-throne-temple which, in the opinion of Hiuen Tsang, was built by Aśoka on the very spot of Buddha's Enlightenment. It

implies that in order to commemorate the Enlightenment, the emperor built a "vajrāsana"[1] on the sacred spot under the Tree of Wisdom which is now covered by the Great Temple of Mahābodhi.[2] The "vajrāsana" was built in a square, four pillared hall with a vaulted roof, in front and to the east of the Bodhi Tree. He also erected a stone monolith surmounted by the figure of a standing elephant holding with its trunk a wreath of flowers. The Śuṅga architect creditably carved out a conventional representation of the Bodhi Tree crowned with tiers of "Rāja-chhatra" (Royal Umbrella) and garlanded with wreaths of flowers hanging from branches of the Tree. The Tree was flanked by two flying angels and a couple of spirits of the Forest. The beautiful pillared hall cherished the stone vedikā (Vajrāsana) which supported the standard of "Triratna". The "Ratna-Vedikā" was intended for the purpose of offerings. The hall was treated with vaulted roof ornamented with replicas of "Chaitya-windows" and Vedic railings.

Hiuen Tsang, in his account, recorded: "On the site of the present "vihāra" (Mahābodhi Temple) Aśoka-rāja at first built a small "Vihāra." Afterwards there was a Brahman votary of Śiva-Maheśvara who reconstructed it on a larger scale." In his "Gayā and Buddha Gayā" Dr. B. M. Barua has, on the other hand, with the help of inscriptions, credited the construction of the said "small-vihāra" (Prāchīna Vajrāsana-gandhakuṭi, *i.e.*, Old Diamond-throne-chamber) to a Noble Lady and Matron Kuraṅgi, wife of king Kauśiki-putra Indrāgnimitra. In his opinion, Aśoka merely erected the stone monolithic pillar in commemoration of his visit to the place, and, perhaps, placed a polished sand stone slab to serve as an altar in front of the Bo Tree. The four edges of the slab were decorated with

[1] See Plate VIII, Fig. 17, Vajrāsana.
[2] Do. V, Fig. 10, Mahābodhi Temple.

beautiful frieze of carving on low relief representing a group of swans, pigeons and acanthuses.

The present Bodh-Gayā temple of immense magnitude has covered the site of the original Bo Tree as well as that of the old Diamond-throne Temple installed by the dowager queen Kuraṅgi. It stands indeed in the same relation to the present Bo Tree which is an off-shoot of the original one, as the Old Diamond-throne Temple did in respect of the original Bo. The carved stone enclosure at Bodh-Gayā probably dated from 100 B.C.

The present Mahā-bodhi temple was certainly built before Hiuen Tsang, seventh century A.D., as he described the structure almost in the form as we now see, inspite of the later repairs and renovations. There was an earlier temple on the site that was built probably about the second century A.D. Another form of still earlier temple is seen in the relief carvings of the Bharhut Railing and yet another example has been unearthed from Kumrahar excavations, on a terracotta plaque, and exhibited in Patna Museum.[1]

The vault of the heaven was symbolized in the hemispherical dome of a Buddhist Stupa likened to an umbrella. A series of umbrellas at the crown of the Stupa, forming the "Hti," represented the different spheres or planes through which the soul of the believer ascended to Nirvāṇa.

It is assumed that the transcendental symbolisms of the crowning parts of the earliest hemispherical stūpas were developed and elaborated to several stories gradually increased from five to thirteen "Bhūmis." Domes, thereby, gradually ceased to become the dominating features of the stūpas. They became narrow in course of time. And large Harmikās and tall spires over them came to be prominent. Their outlook fundamentally changed from the ideal of an

[1] See Plate VII, Fig. 14, Terracotta plaque.

accomplished Buddha to what had been visioned as Mount Meru's supramundane realms, thus making the ideals of the Vedic Brahmans and those of the Buddhists meet spiritually on a common religious platform. The development consummated in pyramidal and conical forms of Brahman-Buddhist temples as evinced in the towering temple of Bodh-Gayā, in the replicas of Bharhut of the third century B.C. and in the plaque of about the same period unearthed at Kumrahar (Pāṭaliputra). The outlines of the cones, emphasised by pyramidal forms, symbolized the forces of the Sun: Light and Life were symbolized by the Fire-altar (Harmikā) and the Tree (Spire). The Tree also represented the Universe (Mount Meru) with the Sun and the Stars as its Fruits and with the various branches as different world-planes.

With the revival of Brahmanism the cult of Śiva interpreted the principles concerning the hemispherical stūpa whereas that of Viṣṇu maintained the tradition of Sun worship as embodied in the conical, pyramidal, Śikhara.

Aśoka came on pilgrimage to Sambodhi, *i.e.*, the spot of the Bo Tree under which the Buddha attained Wisdom. The Tree was one of Viṣṇu's symbols. It is the "Tree of Eternity and the Tree of the Folk," recorded in the Vedic texts. The form of the temple abided by the principles of the earlier Brahman temple which was probably a development of the sacrificial hut (Vimāna) erected over the "Yajña-śālā" of the royal prince of Ayodhyā. To a Brahman devotee it inspired as the supramundane realm of the gods in the Himālayas. That temple of Bodh-Gayā ultimately inspired the design of the Nāgara-Śikhara temple of Āryāvarta. And the Vaiṣṇavas are the heirs of the Mahāyana Buddhists. Buddha came to be regarded as the ninth incarnation of Viṣṇu. The Mahābodhi stood as a monument of the delightful compromise between the two rival sects of a common stock.

There the ideals of the Vedic Brahman and of the Buddhist Śramaṇa found a common bond of happy reunion. Their creative and spiritual faculties prompted creation of the lofty Vimāna that held the sacred vessel full of "amṛita"—the nectār of immortality. One conspicuous example of like type of temple exists at Sārnāth in the form of a votive shrine dating fifth century A.D. In the eighth century, during the reign of Dharmapāla, a devout Buddhist king, a "chaturmukha liṅga" (Śiva-Brahmā) was installed by one Keśava even within the very precincts of the Bodh-Gayā temple for the benefit of the Śaivite Brahman scholars then residing at Bodh-Gayā. The heads of the Bodhisattvas seen in Ajantā painting and Prambanam (Java) sculpture have been crowned by "mukuṭas" with shapes developed from that of the "śikhara" of the Mahābodhi temple. Hiuen Tsang recorded that the temple of Mahābodhi and the full-size image of the Buddha enshrined in the main sanctuary of the temple had been executed by a Śaivite Brahman artist together with another craftsman who also was a Brahman.

BRAHMAN AND BUDDHIST: COMMON STOCK

In Buddhist symbolism "Buddha" has been regarded as Brahmā the creator, the 'saṁgha' is compared with Viṣṇu the preserver and the 'Dharma' with Śiva who proclaims the impermanence of the world. And likewise, the four-sided Brahmā pillar of Hindu symbolism is associated with the Buddha, the eight-sided Viṣṇu pillar with the saṁgha and the rounded Śiva pillar with the Dharma.

All the rites observed in worshipping the "stūpa" were for the enjoyment of the dead of both Brahman and Buddhist. In that connection the spirit of Chandra, Yama or Śiva had to be invoked. Both the followers of Śiva and Buddha observed the common religious rites for attaining "moksha" (liberation), both following the path of "Jnānamārga" (wisdom). In the case of the Buddhist it was specially

indicated by "asta-mārga" (eight-fold Path) pointed out by the Great Yogi. Buddhism adopted the entire symbolic frame-work of the Vedic sacrificial rites. Only instead of burnt offerings and oblation the "bhikkhu" suppressed the fire of evil thought and lust, hatred, envy, passion and anger. All the symbols and metaphors commonly identified as Buddhist—the Wheel, Trident, Railing, Umbrella, Relic-casket (harmikā) as well as the form and planning of the stūpa with its parapharnelia, had been connected with the Vedic rites pertaining to the cults of Chandra and Sūrya before they were adopted by the Buddhist. Śiva became exponent of all the principles connected with the hemisphere of the stūpa pertaining to the cult of Chandra, while Viṣṇu-Sūrya, as the World-Conqueror, maintained the tradition of Vedic Sun Worship, being enthroned in a "śikhara" temple with conical and pyramidal spire that traced its development from the chariot-shaped sacrificial hut erected over the "yajña-śālā" of the solar prince of Ayodhyā and ultimately found a stately form in the creation of the temple of Mahābodhi.

"Aśvattha" as Bo-tree was held in esteem in the Vedic poems. It also was worshipped by both the Śaivite and the Buddhist. The two rivulets Nilājan (Nairañjanā) of Buddhist sanctity and Mohānā of Brahman antiquity combined into one common stream noted as the Phalgu to enjoy an amount of sacredness which was considered greater than that of the Ganges. Bodh Gayā temple in the case of Brahman resolved itself into Nature-Worship in the praise of the Supernatural in Nature External whereas in the case of the Buddhist it resolved itself into worship through Meditation in the praise of the Divine in Nature Internal. Obviously the spirit of the Mahābodhi temple has moulded the Soul of Hinduism. Undoubtedly there lies a symbolical affinity between the Buddha Amitābha (Infinite Light) and Viṣṇu, the Sun-God, both having the wheel of the law as their attribute.

History records existence of certain Brahmanical monastic and religious corporations in ancient Rājagṛiha composed of Jaṭilas, Nirgranthas, Paribrajakas and Ājīvikas. The ascetics used to live together in organised manners. Their modes of living and religious regulations much influenced the Buddhist "Saṁgha" to the development of the liberal order of Buddhism and Buddhist institutions. Buddhism, undoubtedly, adopted some Brahmanical laws and usages and can be considered as a great branch of the stream of Brahmanic culture. In the cave temple of Elephantra a figure of Śiva is seen in a typical pose of the Buddha. And a Buddha image in Nālanda wears matted hair, characteristic of Śiva, the locks hanging on shoulders.

SPREAD OF INDIAN ARCHITECTURAL ARTS

Although the Buddha denied the authority of the Vedas, his very soul was systematised by the philosophy of the Upanishads. That philosophy as a matter of course inspired and largely influenced Buddhist arts. It made Buddhism a world-religion. The techniques of the Brahman-Buddhist architecture and sculpture of the Maurya and Śuṇga periods which developed till 73 B.C., after being transplanted to Amarāvatī at the mouth of the Kṛishṇā river, 200 B.C. to 200 A.D., and thence to Ceylon, finally were rooted in Java where they blossomed in the 8th century A.D., into the magnificent architecture and sculptural reliefs of the majestic Boro-Budur stūpa. The sculptural arts of Sanchi, Bharhut, Amarāvatī, and Ajantā were influenced by the same dynamic movement, the same exuberant expression and vigorous style of intense religious fervour, coupled with a sharp instinct for decorative design, as are seen in their best in the supreme figure of the Chauri-bearer of Didarganj kept in Patna Museum. The Sarnath Buddha is another example of sublime, ennobling art.[1]

[1] See Plate XII, Fig. 22. Sarnath Buddha.

The "toraṇas" of Sanchi and Bharhut dominated those found in China and Japan which are known there today as "Torii." On the other side of Asia, Buddhist arts were carried to Gāndhāra, Bactria, Khotan, Iran, Ural-Altai and Alexandria as well as extensively in Central Asia. The Græco-Buddhist art and the Irano-Buddhist art of the Punjab and Afganistan controlled the architectural arts of Central Asia in Khotan, Kucha, and Turfan as far as Tun-haung. Chinese Turkistan, Korea, and Mongolia, Indo-China and Indonesia absorbed the spirit of Indian art to a remarkable degree.

The architecture of the well-known cave-temples in the Western Ghats was influenced by that of the Lomaśa Ṛishi cave (257 B.C.) dedicated by Aśoka the Great himself on the Barābar Hill near Gayā so as to accommodate the Ājīvika ascetics.[2] The Chaitya-windows or sun-windows of Karle, Nāsik, Ajantā and elsewhere trace their origin in the facade of the Lomaśa Ṛishi cave. The roofs of the ancient huts in Bengal as well as the "vesara" or barrel-shapeP roofs of some of the temples and "vihāras" in Bodh Gayā and Nālandā developed from the arch of Lomaśa Ṛishi cave. The Barābar Hill cave inscription of Anantavarman declares that the Maukhari chieftain Anantavarman installed an image of Kṛiṣṇa in the Lomaśa Ṛishi cave in the 3rd or 4th century A.D., and added a facade with the figure of Kṛiṣṇa as an ornament to the cave which was left unfinished by Aśoka. Certain aspects of the Buddhistic architectural arts and crafts of the Aśokan age are traceable in the Pallava arts which flourished from the third to the eighth century A.D.

So it can be inferred that in the centuries following the age of Aśoka, with the gradual absorption and assimilation of congenial elements from the Persopolitan and Græco-Roman or Gāndhāran traditions, Magadha, Mathurā, Taxilā and other art centres in ancient India

[2] See Plate VII, Fig. 15, Lomaśa Ṛishi Cave.

created and fostered classical architectural arts and crafts which profoundly inspired the building arts of almost the whole of Asia. These arts were obviously the flowering of the ancient Vedic and Upanishadic impulses in combination with more human passions and actions of following ages. Their steady progress maintained a well-ordered course. Trained artists and architects accompanied Buddhist missionaries and teachers all over Greater India and Central Asia in order to demonstrate the practice of the True Law in the Buddhist rituals. Śilpa-Śāstras were carried along with the Buddhist scriptures outside India and the sacred relics or images used to be preserved in notable shrines built after the exquisite models erected in epic styles in India.

Upheaval of Gupta Arts and Culture

There is a much later tradition that Aśoka breathed his last in the sacred hill of Rājagṛiha in 231 B.C. According to the Northern traditions, his saintly brother Mahendra after living an anchorite's life in a hermitage on the "Gṛidhrakūṭa" also attained "Nirvāṇa" therein. But Aśoka's religious arts with all their spiritual eloquence spontaneously stimulated creation of the successive art instincts and nobler emotions of the nation even as the philosophy of the "Tathāgata" left a permanent impress on the exhausted soul of the weary and the oppressed. His supreme architecture contributed much to the cultural conquest of the nation over half of the world. It also contributed much to moulding the progressive art life of India.

Indian arts up to the fourth century A.D. was eclectic and transitional. The arts of Pāṭaliputra struggled successfully to find definite expression in Sculpture and Painting under the Guptas, who ruled the country from fourth to sixth century A.D. They attained their climax in the period between seventh and thirteenth century A.D. under the influence of a great School of Indian Architecture. During this

period Hindu Architecture (Brahman-Buddhist-Jain) achieved tangible results. The naturalistic arts of Bodh-Gayā and Sārnāth became spiritualised so much so that they attained an excellent height of idealism. Fostered by Samudragupta (circa 326 to 375 A.D.) and his son Chandragupta II (the famous Vikramāditya, cir. 375 A.D. to 413 A.D.) and the succeeding monarchs including Kumāragupta (415-455), Skandagupta (455- cir. 467) and Narasiṃhagupta Bālāditya (486 to 522 A.D.) the Gupta school of Architecture maintained and developed the glorious traditions of Amarāvatī and Mathurā with greater spirituality, tranquility and beauty. Cultural and æsthetic pursuits dominated the life of the nation. It is said that the court of the Vikramāditya was adorned by nine great scholars (Navaratna) representing various phases of culture and including Kālidāsa, Dhanwantarī and Varāhamihira.

In the Golden Age of the Imperial Guptas, the North and South India became united both spiritually and intellectually on a strong national bond. A common and distinct character, evolved out of progressive experiments and experience for creative centuries, transcended all political, sectarian and linguistic distinctions. All branches of Hinduism, Buddhism and Jainism were patronised impartially by the Gupta monarchs. The artistic enterprise of the nation absorbed and assimilated some of the best elements from the arts of the Occident and the Western Asia and thoroughly Indianised them before the composite Indian art and architecture flowered. The union of Brahmanism with Buddhism and Jainism was marked by a great upheaval in every phase of cultural expression. Architecture with allied arts and crafts came under its influence. The theory of Music, Dance and Iconography were codified methodically. Philosophy, Mathematics, Astronomy, Science, Medicine, Literature, Poetry, Painting, Drama, Histrionic Arts and Sanskrit learning underwent revival and renaissance. The final recension of the Mahābhārata and the compilation of the Viṣṇu and other Purāṇas, the Manusaṁhitā and the

Bhāgavata as well as Kālidāsa, Amarsiṃha and Vararūchi we owe to this living age. The gold coinage of Samudragupta and other emperors and their seals attained the maximum height of excellence. The famous iron-pillar of Old Delhi stands as a monument indicative of the achievement of the Guptas in metal industry. It was an era of the fully organised and recognised, highest creative faculty in the development of a broad Hindu-Indian National Commonwealth with spiritually æsthetic outlook on life and living. Śilpa Śāstras were compiled. Image-making craft was associated inseparably with the composition of Indian architecture, particularly with that of temples.

In the Transition period of early Buddhist age India absorbed best elements of arts from almost every quarter of Asia out of which, in Gupta age, the complete synthesis of Indian art was formulated combining the abstract ideas and spiritual vision of the Vedic period with human conduct and the realities of life of the Buddhist-Hindu.

Pāla Emperors

With the decline of the Imperial Guptas about 500 A.D., the Post-Gupta kings functioned in Magadha as mere local rulers. This state of things continued till 750 A.D. when Gopāla established the Pāla dynasty in Gauḍa of Bengal and conquered Magadha. His son Dharmapāla, the "parama saugata parameśvara paramabhaṭṭāraka Mahārājādhirāja" a devout Buddhist yet as zealous patron of Hinduism—who donated lands on the massive temple of Nanna-Narayana in Subhasthali, the eminent founder of the University of Vikramaśila, established a mighty empire, in course of his reign for 32 years, which enlisted homage of Bhoja, Matsya, Madra, Kuru, Pañchāla, Yadu, Yavana, Avanti, Gāndhāra and Kira. His son Devapāla defeated the Gurjaras and Huṇas and annexed Utkala and Kāmarūpa. The Śailendra king Shrīvālaputradeva of Sumatra and Java sent an

embassy to the court of Devapāla and arranged to erect a vihāra at Nālandā. For the maintenance of the vihāra the Pāla king granted the revenue of five villages in Rājagṛiha and Gayā.

The Pāla emperors ungrudgingly patronised Mahāyāna Buddhism and Nālandā establishment. Preponderance of tantricism prompted the Pāla artist to produce a large variety of images. But the calm, contemplative expression of the Gupta image lacked in his honest attempt. His purpose was to reflect the inner spirit of meditation on the face of the God or Goddess by half-open eyes and otherwise in order to correctly express " dhyāna " or " yoga mudrā." His honest attempt mostly resulted in a matter of formality devoid of the nobler spirits instinct with life and motion which were the chief features of the Gupta arts.

During the Pāla period of Bengal, eighth to twelfth century A.D., a very striking development of Gupta architectural art manifested itself under the direction of two architects named Dhīmān and Vitapāla and their pupils. The Nālandā school of Architecture, if it may be called so, was mostly the creation of this fertile age. The bulk of the sculptures noticed in Bodh-Gayā belonged to the sentiments of the Pāla kings of early ninth century, the figures of Śākya Muni and Padmapāni being numerous.

The Pāla kings brought about a gorgeous, luxuriant style of architecture profoundly inspiring. Whereas Jarāsandha's Girivraja depicted rude battlements and gateways of titanic proportion and strength, a competent Military Architecture,[1] king Bālāditya's Nālandā interpreted musical rhythms of epical arts in an architecture that was eminently representative of the classical renaissance of the age.[2]

[1] See plate IX, Fig. 18 Ancient India : Civic Architecture.

[2] Do. XI, Fig. 21, Nālandā Architecture : Vesara Roof.

Consequent to the decline of Rājagṛiha the followers abandoned dwellings of their teachers for settling themselves in Nālandā with the result that Nālandā arose in all its splendour on the banks of the lakes of Bargaon (vihāragrāma) as " the most magnificent and most celebrated seat of Buddhist learning in the world." Colleges of instruction, halls of debate and disputation, schools of arts, crafts and industry, shrines, temples, " chaityas," " saṅghārāms " and " dharmaśālās " were built along the banks of stone-bound beautiful tanks with spreading ghats, encircling the bases of lofty towers adjoining mango groves. Outside and around the said groups of structures were piled up long, four-storied barracks, with characteristic towers, for the preachers and professors.

Glory of Nālandā

Nālandā was situated in a level land about 7 miles to the north-west of Rājagṛiha. According to Jain texts it was a suburb of Rājagṛiha where Mahāvira spent fourteen rainy seasons. Pāli literature refers that the Buddha often visited Nālandā and rested in a mango grove called " Pavarika " with a mission to teach his followers. And it may be imagined that situated in the midst of the mango grove one very lonely cottage of " Sāriputta," the faithful comrade of the " Tathāgata," attracted growing numbers of disciples with the result that it soon became a spiritual centre. Thereafter, between 425 and 625 A.D., with the patronage of the state and with public munificence it gradually developed into the splendour of an important township teeming with population, controlled by a great University.

It is said that in order to commemorate the memory of Sāriputta, Aśoka erected a lofty temple in Nālandā. Generally 450 A.D. is

assigned to the royal recognition of Nālandā, although Tārānātha traced it to Aśoka.[1-3]

So, in the early mediæval age of Indian history, the far-famed University of Nālandā, with its wealth of architectural dignity and personality, its brilliant sculptural decoration and attractive forms, produced the finest fruits of Man's thinking and the Nation's creative genius. Nālandā, and later on Uddaṇḍapura and Vikramaśila, generated the flowing of a cultural stream of pre-eminently creative impulse. The popular belief that Pāṭaliputra moulded the thoughts of Tibet, China and other parts of Eastern Asia through her missionaries deputed from Nālandā and Vikramaśila has been further strengthened by the recent epoch-making discovery of numerous Sanskrit manuscripts in Tibet by Reverend Mahāpaṇḍita Rāhula Sankṛityāyana, a Member of the Bihar and Orissa Research Society. Wherever those pious people went, they carried with them various paintings and drawings of Indian architectural arts and various images with the desire to assist the expounding of the sacred doctrines. Those demonstrations, coupled with spiritual discourses, touched the souls of the believers and ultimately brought about the glowing arts and architectures of Tibet and the Greater India.

In the fist half of the 7th century A.D. Tibet was converted to Buddhism by its saintly king named Srong-btsan-sgam-po after his marriage with the princesses of Nepal and China both of whom were Buddhists. They were deified as the Green and the White Tara. The king sent his prime minister to Magadha who brought back with him Buddhist monks and sacred Buddhist literatures.

Padmasambhava, the founder of Lāmāism, went to Tibet from Nālandā, according to tradition, in A.D 747 at the invitation of the

[1] See Plate X, Fig. 19. Nālandā : Votive stūpa.
[2] Do. Do., Fig. 20. Do. Remains of Temple Avenue.
[3] Do. XI, Fig. 21. Do. Vesara structure.

king of Tibet. Under his direction a temple was built in the Lhobrak valley on the model of Nālandā temple. He accomplished total conversion of the country into Buddhism. Miniature paintings which decorated the palm-leaf manuscripts of Paṭaliputra and Bengal influenced the origin of Tibetan painting to a considerable extent although China also had her share. The famous missionary named Dipaṅkara Śrījñana went to Tibet in the 11th century A.D., on invitation, and revived there the cult of orthodox Mahayana.

Nāgārjuna, Rector and Governor of Nālandā, made it into a "fountain-head from which Tibet and China imbibed their learning and civilisation." Āryadeva of Ceylon sought opinion and advice, concerning religious matters, of the Mahāsthavira Nāgārjuna. In the opinion of Hiuen Tsang, who stayed in the place in the middle of the seventh century A.D., it had "richly adorned towers and turrets like pointed hill-tops congregated together. The priests' chambers in the outside courts had dragon-projections and coloured eaves; pearl-red pillars, carved and ornamented, richly adorned balustrades, and roofs covered with tiles." It is also stated that "Dharmachakra" flanked by two gazelles was the insignia of Nālandā. One 80 feet high copper image of the Buddha raised by Pūrṇavarman in early sixth century A.D. and a beautiful monastery of brass, then under construction, by Harṣavardhana of Kanauj, attracted the notice of the Chinese pilgrim. The sky-scraper "vimāna" of the temple of Bālāditya, 500 A.D., expressed all the eloquent appeal and reflected all architectural splendour of the Mahābodhi temple in Bodh Gayā which it resembled closely. From the description of Hiuen Tsang it can be traced that Nālandā fostered a scientific system of Gardening (Horticulture) which spread through the village administrations that maintained regular Garden and Park Committees as well as Water Committee.

In the time of King Harṣa, seventh century A.D., the University of Nālandā worked as an International Centre of Learning attracting half of the world. As stated by his court-poet Bāṇabhaṭṭa a group of skilled painter-architects flourished then in Nalandā. The stream of art-culture, which originated in Nālandā and flowed through Magadha, assumed a new character in the sympathetic soil of Bengal and very successfully developed during the 800 years of the rule of Pāla, Sena and Pathan kings.

For successive centuries both Brahmanical and Buddhistic Art and Culture were patronised by Nālandā equally and impartially. The Vedas and Tripiṭakas were taught to the students with equal zeal and honesty of purpose. There was no unequal or partial treatment in promoting the crafts of image-making or architectural designing. The various sects were looked upon by the administrators of Nālandā, as the components of one Indian culture. Consequently in the ruins and excavations of Nālandā and Tillarah, Hindu, Jaina and Buddhist arts and ideals are found mixed together. The same spirit of catholicity was pursued by several religious ministrations in subsequent ages to the flowering of several master-pieces of Indian arts. Brass images of "Aparājitā" and " Trailokyavijaya " were, unfortunately, hostile conceptions. They were the unfortunate outcome of the Tantric decadent age of Nālandā.

The counterparts in the "prākāras" (Compound walls), " Gopurams " (gates), court-yards and quadrangles of South Indian temples can be traced from the walled enclosure of Nālandā divided into courts. The dragon-pillared and richly carved pavilions of Nālandā "sabhā maṇḍapas " (Assembly Halls) inspired the conceptions of South Indian and other temple " maṇḍapams " as well as Durbar Halls of Old Indian palaces with their carved pillars. The designs of the celebrated Throne Platform and the King's Audience Hall at Vijayanagar followed the character of Nālandā architecture. The famous

"maṇḍapam" of the Viṭṭhalasvāmi temple of Vijayanagar of the 16th century was but a replica of Nālandā pavilion that had its "pillars ornamented with dragons, beams resplendent with all the colours of the rainbow, rafters richly carved, columns ornamented with jade, painted red, and richly chiselled." The pillared pavilions of Fatehpur Sikri, built by Akbar the Great, whose wise statesmanship zealously patronised introduction of Hindu architectural arts in his imperial buildings, followed the tradition of Nālandā architecture.



Messenger of Magadha

II

THE MESSAGE OF MAGADHA

Influence of Nature

IN ages long gone by, when the majestic bend of the Ganges with her life-giving waters fertilized the wide expanse of Magadha, when her countless streams and tributaries, running pell-mell, formed the high-roads of Nature, the veins and arteries of civilisation, the soul of an unseen Bodhisattva lived for untold generations in the solemn silence radiating from the heart of those primeval forests of Magadha, where the spreading Banyan still lifts its lordly crown in that entwined forest-cathedral; the innocent jungle-folk sang the song of Nature, the melodious chants echoing and re-echoing from tree to tree like the tune of a mighty organ played by the rippling river beating time on the shores of the Bhāgīrathi. In sequestered groves and caves the sons of Nature listened to the Devas whispering from the tree-tops of "Nyagrodhas," swaying to and fro by the gentle wind, the mystery of the universe and the secrets of life. And they worshipped their golden feet on the mystic lotus flowers of the cosmic lake which appeared crimson when the "Ūshā" smiled on them in the East, and golden when the "Sūrya" sank in glorious majesty in the West, and silvery white when the "Pūrṇa Chandra" (Full Moon) reigned supreme in the motionless stillness of night. Wild animals and flowers sang and danced in joy. And in response to their enchanting song, the mirthful Nāga damsel quivered on the moon-lit, opalescent bed of the serpentine "Nairañjanā." In a divine ecstacy the soul of the Nāginī merged into the infinite realm of Spirit enlivened with eternal music and moonlight. Gentle, soft breezes

began to flow and blow the fragrance of lotus and myriads of sweet-smelling flowers. The petals of the smiling lotus melted into sweet perfume as the shrill of the swaying peacock hushed into silence. But the rhythm of Nature's music vibrated in the subtle elastic fluid of ether from space to space, from region to region. The air of the virgin forest was filled with all the benevolent spirits, calm and contemplative.

The inspiration of this eternal message of the Forest, the ritual of the "Araṇyāni" and the sublime religious tenets which grew out of its philosophy in the slumbering gloom of the dark and deep recess of the Lomaśa Ṛishi cave of the Barābar hills in Gayā formed the genesis of the symbolism of Fine Arts and Architecture in Hindusthan throughout all the successive ages down to this day. The "Gṛidhra-kūṭa" (Vulture's Peak), the forest-dwelling of the "Mārakāyika" demi-god "Śakra," the fountain-head of supreme spiritual fervour, prompted and pulsated with the conception and creation of the resplendent Rāja-gṛiha, Mahābodhi and Nālandā.

Dawn of Buddhahood

There in the silent retreat of the deep shadow of the foliage over-looking the time-honoured "Nairañjanā" which flowed in a glassy stream along the heart of the tract of the sacred "Uruvilva," the vision and contemplation of Śākyasiṃha harmonised with the symphony of Nature—as He sat motionless, absorbed in profound meditation as a cosmic phenomenon for the salvation of Man. Seasons enacted their multicoloured dramas before him. And it was a glorious Dawn of intellectual illumination on the "Sambodhi" under the spreading Tree of Wisdom, that heralded for the weary and oppressed the gateway to the temple of Peace and Compassion. "Apāvutaṃ tesaṃ amatassa dvāraṃ"—" Wide open are the gates of immortality."

With a form radiant with feeling and compassion, the Buddha with begging bowl in his hand stepped his lotus feet towards the "Veṇu-vana" in Rājagṛiha, the site of the first Buddhist monastery, along the steep bank of the "Karandaka" lake of thousand lotuses that welcomed him with the sweetest music of the black bee "Mañju guñja bhṛṅga". . . The air of the tropical evergreen echoed and re-echoed the melodious voice of the Tathāgata; "On one occasion, Ānanda, I was dwelling at that same Rājagaha in the bamboo grove in the Squirrels' Feeding Ground."

On his way to Pāṇḍava Parvata across the mighty city of Rājagṛiha, his golden countenance freed from worldly passions and desires was noticed by King Bimbisāra from the "Siṃhapañjara" balcony adjoining the lofty tower of his palace. Seated in his royal "Paryaṅka" (palaṅkena) and attended by a train of noblemen and soldiers, the king hastened to meet the Buddha then surrounded by twelve myriads of Brahmans and citizens in a thick grove of palmyra trees only at a short distance from the wall of the city.

Buddha held out his bowl. Promise of all material wealth, even the throne of Magadha, failed to tempt the divine conscience of the youthful mendicant from that bridal of poverty in which his pacific mind delighted. "This life is pain, free only is he who lives in the open air"—thus exclaimed the Buddha. The civic life of materialistic Rājagṛiha maintained the strictest silence before the Master's Proclamation. His was the message of Magadha.

The message was transmitted by the celestial harper "Pañcasikha Gandhabbaputta" from the Indasāla-guhā at the Vediyaka mountain of purple blue. The sound waves swept along the "sombre gorges covered with vegetation."

King Ajātaśatru met the Buddha in the mango grove of Jīvaka and listened to his religious discourses delivered in the beautiful

monastery which the famous court physician built for him.[1] The event was embodied in the Buddhist scriptures known as "Samañña phala-Sutta of the Dīgha-Nikāya." Enclosed by a copper-coloured wall 27 feet high and provided with sleeping accommodations, the monastic establishment contained cells, huts, pavilions and a private chamber (gandhakuṭi) for the use of the Buddha and his order. It looked like the open-pillared hall with a gabled roof as noticed in the sculptural reliefs of Bharhut and Sañchi.

After the "Parinirvāṇa" at Kuśinagara which happened in the midst of a "Sal" grove overlooking the river Hiraṇyavatī, Ajātaśatru built a stūpa over the relics of the Buddha brought and deposited on the Eastern side of the "Veṇuvana where he used to rest."[2] Later on Aśoka had this stūpa renovated. He took away most of the relics from that place for distributing the same among the numerous stūpas he gradually erected all over India.

The First Great Recitation (Prathama Mahāsaṃgiti), *i.e.*, the First Buddhist Council which was presided over by Mahā Kaśyapa, took place in the charming forest of Karanda-Veṇuvana on the level plateau below the arch-opening of the "Satta-parṇi-Guhā" (the Cave Glorious) in a "Mahāmaṇḍapa" built by the emperor Ajātaśatru.[3] Both the "Satta-parṇi" and the "Mahāmaṇḍapa," *i.e.*, Council Hall were situated on the Northern face of the Vaibhāra-giri. Upāli, Ānanda, Moggallāna and other constant companions of the departed Great took part in the solemn occasion in which the entire Dhamma and Vinaya (Buddha's teachings) were recited.

1 See Map of Rājagṛiha.
2 Do. Do.
3 Do. Do.

ART AND PEACE

The holy monasteries in the cool retreats of Magadha kept burning the lights of learning in the chaos of ignorant darkness overwhelming the Occident at that age of antiquity. Creative energy and spiritual illumination can yet be generated from modern India so as to contribute to the sum-total of human thought for the amelioration of the lot of bewildered humanity, for the solution of the knotty problems of life which are baffling the best endeavours and the best understanding of the modern world engaged in warfare and political supremacy.

The imperishable arts of Aśoka the Great may inspire the evolution of a new, noble, international Indian Architecture which may generate, stir and stimulate the æsthetic imagination and peaceful contemplation in the minds of modern people now wearied with the artificialities and bitterness of the modern scramble in order to effect a New Order.

Europe and America, inspite of all their undisciplined and unrestricted strength, will be bound to undergo a spiritual and artistic rebirth pending the creation of a new humane world order in which India and China are expected to supply the mainspring of philosophic introspection and artistic inspiration. "In the beauty of flower and sunset" observes Mr. H. G. Wells, "we have some imitations of what life can do for us, and in some few works of plastic and pictorial art, in some great music, in a few noble buildings and happy gardens we have an imitation of what the human will can do with material possibilities. Our race will more than realise our boldest imaginations, it will achieve unity and peace, will live in a world made more splendid and lovely."

Some thinkers today believe that spiritual appeal of Fine Arts can inspire the creation of a spiritually great World Architecture ennobled with lofty ideal for the establishment of Peace

and Fraternity. Indian architecture can contribute substantially to the formation of such World Architecture. It is a great agency for inculcating finer sentiments in mankind.

THE CITY OF ŚIVA

One feels his imagination enlivened with noblest spirits when he ponders over the ancient days of Bārāṇasī, the city of Śiva, *Viśveśvara*—the almighty Father and Governor of the Universe, *Annapurṇā*—the supreme Mother who nourishes and cherishes in her bosom her countless dear ones, *Buddha* setting the wheel of the Law in Motion at the "Mṛigadāva Araṇya," *i.e.*, the Deer Park of Sārnath about 583 B.C., *Agastya* performing his "yajña," *i.e.*, Sacrificial rites in the heart of primeval forest. The bazar and temple of Viśvanātha mark a spot where once there was a forest which would be treaded by the Vedic Ṛishis and the present "Yajña-Kuṇḍa" in the said temple has existed from the olden days when and where the Ṛishi offered "homa" with the chanting of "rijks." In Kāśī King *Hariścandra* sacrificed his all to fulfil his promise before *Viśvāmitra*. The Jain Tirthaṅkara *Parsvanātha* taught his disciples squatting around. *Śaṅkarācārya* propagated his doctrines of "Advaitavād." *Tulsidāsa* composed his sacred "dohāvalī" at Saṇkaṭa-mocana which has brought religion to millions. *Śrī Rāmakṛiṣṇa Paramhaṃsa* observed that Śiva with trident in hand approached every dead body brought there for cremation and whispered into its ear the Holy Name thus leading it to salvation. All these and many more associations the Hindu mind instinctively feels when the magic word Kāśī or Bārāṇasī is uttered. Bārāṇasī is a national asset and a spiritual treasure of the Hindus. It is an outward expression of Hindu religious devotion.

In Buddhist legends and Buddhist texts there are numerous references to Kāśī. There is hardly any narrative in the 550 Jātaka stories

which has no allusion, direct or indirect, to Kāśi, the most antiquated sacred city of Madhyadeśa, *i.e.*, Eastern India. Immediately after His Enlightenment under the Bodhi Tree at Bodh Gayā, the Buddha declared Bārāṇasī as the most congenial place to germinate the seed of his new creed. He declared thus: "Gacchāmi Kāsinaṃ puraṃ Aham amata dhumdhibhih." "I shall go to Kāśi, there I shall beat the drum of immortality for the benefit of all living beings."

Millions of Buddhists throughout the Buddhist world have viewed Kāśi with awe, wonder and reverence. The cosmopolitan atmosphere of Bārāṇasi always welcomed religious preachers and scholars of all schools of thought including those who did not subscribe to Brahmanic ritualism and sacrifices. In fact, it was a most sympathetic soil for the development of many conflicting cultures. From Bāränasi imperishable messages of many a saint and seer were delivered to the moral and spiritual uplift of humanity. Indeed Bārānasī epitomises a most glorious chapter of Indian history.

STRENGTH OF HINDUISM

From the third century B.C. to the seventh century A.D. the philosophy of Buddha considerably influenced the evolution of Indian civilisation and that of Indian architectural arts. Yet it could not penetrate deep into the minds of the bulk of population. On the other hand Brahmanic culture stimulated by the Gupta emperors, dominated the thoughts of the people all the while. Buddhism was gradually absorbed in the current of Hindu thought, from out of which the two sects Vaishnavites and Śaivites emerged. In the eighth century A.D. Brahmanism developed into broad-based Hinduism under leaders like the great Śaṅkarācārya. And it has to some considerable extent retained its strength to this day.

Like Kashmir, Kāśi (Benares) was one of the citadels of Śaṅkarācārya from which he propagated his doctrine of monism (Advaitavāda) as a direct challenge to the cult of "Bhakti." The doctrine also opposed the philosophy of the Buddha. Situated on a magnificent bend of the Ganges, Kāśī, at a remote age, flourished as a famous seat of Learning, Art, Commerce and Industry. Present excavations that are being conducted at its Rājghat have unearthed numerous objects of art which identify its existence at least in the Śuṇga period of over 2000 years back. Earlier specimens are expected to come out of further deeper excavations. All these striking finds substantiate that Benares was the store-house of Brahmanic Culture enriched with the Vedic alliance and, consequently, the central authority on questions of the Hindu faith and expression. Since pre-historic days its ecclesiastical and cultural establishments attracted Sanskrit scholars, philosophers, student-devotees and pilgrims from all parts of India.

To such a centre of learning the Buddha, naturally, hastened after enlightenment in Bodh-Gayā with a view to explaining the merit of his discovery. His lecture was delivered in the "Mṛigadāva Araṇya," *i.e.*, Deer Park of Sarnath situated on the eastern boundary of Benares. He converted a large number to his fold. For successive centuries Buddhism prospered as a powerful religion embracing half of the world.

But in the meanwhile, the new-fangled Hinduism did not remain silent. Its growth could not be arrested. And during and after the Gupta period, Hinduism steadily developed to a theological maturity. The wonderful Śiva temples of Ellorā and Elephantā of the eighth century A.D. were erected, and carved out of living rocks as tangible monuments of Hindu spiritual expression, rivalling even the masterpieces of Amarāvatī and Ajantā. Hinduism forged ahead its triumphant march with a determined vigour heretofore unknown to the Nation.

Hinduism originated as a process of thought, not as a system. And from time to time it absorbed congenial elements from other sources, in the course of its development. It was not a case of accident, therefore, that the essence of Buddhism was to some extent absorbed and assimilated to enrich the Hindu fold. In a low relief in the cave temple of Elephantā, Śiva is seen seated in profound meditation with a pose just like that of a Buddha.

Śaṇkarācārya brought about a new synthesis in the conception of the Divine. He attained the knowledge of God the Absolute, the only one perennial Being. God is only one Reality. Everything else is unreal, phenomenal and transient. Śaṇkara inaugurated a new and complete philosophical system based on Reasoning and Reality.

As a reaction of the impress created by the Buddha on the minds of the people, and, as a process of concretising the supernatural Rudra of the Vedic origin, his great intellect conceived a more conducive, much more real, form and symbol in Śiva-Mahādeva.

The then Buddhist "Saṃgha" could hardly hold its own in the country-wide debates and discussion organised by Śaṅkara. The result was the gradual loss of strength and solidarity by Buddhism of a later decadent period and its slow disappearance from the land of its origin.

With the passing away of the Buddha the central authority gradually dwindled and, in course of time, vanished altogether because, as Dr. R. C. Majumdar has explained in his "Corporate Life in Ancient India," the Great Master "did not nominate any of his disciples as his successor, nor made any arrangement for a definite organisation to take his place." The Saṃgha was left to be governed on democratic principles. Even in the life-time of the Buddha the defects of the system were experienced in an incident at the 'Saṃgha' at Kośambi when the Buddha himself could not compose the differences

of two contending parties. He was implored to refrain from intervening in the matter and in disgust he left the place. " The Bhikkhu Saṃgha is divided, the Bhikkhu Saṃgha is divided "—he exclaimed.

But it must not be concluded that the spirit of Buddhism is totally dead in its place of birth. The message of Buddha is imperishable. It has passed into modern Hinduism to continue and fulfil the doctrines of the Upanishad. Buddha stands immortal as a guiding star in the history of civilisation to bring about a new world order which is intended to be rooted in world-embracing love and fellow-feeling. That coming world order is being largely influenced by the philosophy and art of Buddhistic inspiration.

In later mediaeval India, particularly in the time of Śaṅkarā-cārya, it became necessary to readjust social and administrative regulations because of the economico-political disorder caused by the weakening of the socio-ethical discipline.

Aśoka, Kaniskha and Harshavardhana prevented for one thousand years disintegrating catastrophies due to defective constitution by calling general councils. But after their death none could counteract the destructive forces operating on the disbanded organisation. The dynamic strength coupled with logical arguments of the philosophy of Śaṅkarācārya won the heart of the nation and completely eradicated the cult of Buddhism, in course of time, from this country.

III

MAGADHA ARCHITECTURE UNDER MOSLEM RULE

THE tide of Hindu religion flowed unsullied till the aggression of Moslem cultural outlook. The conquest of Northern India by the Turks and Persians in the eleventh century A.D. affected the Hindu outlook in general. Consequently, a composite Hindu-Moslem culture sought out a new path for the development of Indian Architecture. In the case of Pāṭaliputra, the Muhammadan phase of Indian Architecture began its course in the thirteenth century A.D. after the province was conquered in 1197 A.D. by Muhammad Bakhtyar Khilji, Nālanda being deserted completely. Among the several Hindu-Moslem styles that originated in the various parts of Northern India, the one introduced by the far-sighted Pāthan ruler Sher Shah, who ruled Magadha from Gaur in the sixteenth century, was classical. His tomb built at Sasaram was a masterpiece in that style. Its restrained character was, later on, equalled by the Taj-Mahal in Agra. The latter is a unique example of exquisite, feminine grace and beauty worked in chaste marble whereas the former is strong and dignified with great masculine vigour, still graceful and elegant. It is a veritable epic poem in Chunar stone full of virile strength and solidarity.

IV

COLLAPSE IN BRITISH INDIA

THE Moslem monarchs maintained and developed the local tradition of Indian Architecture, creditably, till the sixteenth century. Under their patronage the architecture of Magadha continued in a flourishing condition for centuries until it was invaded by occidental ideas. In British India the native arts and crafts dwindled owing to the desire for novelties from new things of the West, and architecture also similarly suffered. In the interior the old building traditions continued, although in a decadent form. But in the cities and towns, with greater contact with the things and ideals of the Occident, the beautiful local styles gradually gave way to a hybrid style, in both architecture and material. The age-old soul of Magadha became sterile and dead, with a third-hand imitation of Europe as its inspiration, and gradually cutting itself adrift from its sheet anchor of national tradition. With the loss of its own ancestral culture, the ideals and habits in all other aspects of the nation's life blindly followed those of the conquerors.

In recent years Bihar (Magadha), like other provinces in India, has been subjected to the insidious onslaughts of Ultra-Modern Architecture imported from America, Holland and Germany. Far from developing her indigenous arts to suit modern conditions of Indian life, of Ultra-Modern simplicity and utility, Bihar, like other provinces, has been thoughtlessly uprooting her national, pristine tradition in architecture and arts, and relentlessly copying the west in respect of building construction. It appears that the local architects, trained in modern schools of thought, have had no definite, creative ideal to

follow. They are aimlessly drifting from one goal to another. Their social, spiritual and æsthetic aspirations and conceptions are in a chaotic condition.

Borrowing what is wholesome for the nation from other people's culture and assimilating it into the nation's own to give it fresh strength and vitality was never, and will never be, antagonistic to Indian imagination. In fact, Aśoka and the Gupta emperors encouraged such eclectic assimilation to the enrichment of India's architecture. All the arts in different climes, all the world over, and through ages, have been more or less subjected to outside influences, artistic and cultural; History stands as witness. There are certain aspects of art conceptions and techniques which are common to several schools of thought and action in various countries of the East and the West. It cannot be disputed that there is some delightful affinity of Egyptian, Assyrian, Cretan, pre-Phedian Hellenic and Christian art of the Middle Ages with particular traits of Indian æsthetic ideals which are based on beauty inherent in spirit, not in matter. The development and continuation of such common ideals in the field of architectural composition is much needed for international harmony and peace. Those who are endeavouring for effecting Indian Cultural Renaissance with a mission for inspiring the correct formation of the Coming World Order should take a note of it. What is dangerous for the nation is the grafting of unwholesome or discordant, unassimilable elements into the corpus of the cultural life of the Indian. A complete surrender to the materialistic culture of the West, which is fighting for political and economic supremacy, can never be beneficial to the natural growth of Indian nationality. In the opinion of Professor Sir Sarvapalli Radhakrishnan, "Politics and Economics were only means to the end of civilized life which consisted in the cultivation of finer values. Art should not be regarded as a mere luxury of life but as an essential of all real living." In this era of Material Progress—mechanical and

industrial—the question that confronts many is: What should be the outlook of the New Architecture? Will the development of ancient architecture be consistent with this age of mechanical civilisation? Or, would not rather the creation of an altogether Original Architecture, uprooting old tradition, make room for mutual approach in the cause of human progress, peace and good will?

The answer is: Future Architecture must have æsthetic yet spiritual outlook. Man cannot live by bread alone. He must have æsthetic, spiritual food and nourishment as well in order to redeem his life and soul from brutality, to free himself from the iron yoke of economic necessity and mechanical rigidity. The building he lives in should be an outward manifestation of his inner joy and vision. A great dwelling is not a soulless thing but has a voice with which it silently speaks to the spirits that are sensitive to its influence generation after generation. A dwelling house, or a House of God, has a direct influence on the mental, spiritual as well as physical health of those who live in it or who worship in it.

Greece and Rome, Egypt and Carthage, Assyria and Babylonia and other countries which evolved material civilisation of a high order, disappeared from the face of the earth. But because the civilisation of India was based upon the values of spirit it has still continued as a living force. The New Civilisation, if it wants to continue, should be based upon spirituality which are to be embodied in material forms as characterised in architecture.

Mechanical organisation did outrun the social and civic amity of the ancient Greeks as it is doing to the present day Occident. Modern Science has not taught the people to live in close friendship by discarding war. Rather it has indulged in newer and newer inventions in the modes of destruction.

The nations of today have not cherished for their central motive force any sublime, benevolent ideal rooted on universal fellow-feeling.

On the other hand, they are striving for material progress which is measured by speed or horse-power. Forsaken as they are by the unifying, spiritual principle of "Dharma" (religion) which sustains, they are misguided by the horse-power principle of Progress which drives. Their finer sentiment for conceiving creation of a humane civilisation being overthrown by their maddened zeal for acquiring material Power, their social equilibrium has been shattered to the perpetuation of hatred and bloodshed.

CULTURAL OUTLOOK ON LIFE

Humanity demands from civilisation an effective contribution to the amelioration of the lot of mankind. Civilisation should ponder over the problems of life and society and show the way for mankind to live amicably and nobly in their respective places under the common sun, stepping over the limits of sectarian churches and getting to the core of universally spiritual Truth. A proper outlook on Life, with the spread of spirituality, international fellow-feeling and intellectual mutuality, can alone dispel the rage of the people that impels them to enter into the hidious conflicts of political and economic interest which have engulfed the world in all-pervading horror.

Indian Architecture with its universal, plastic language is a great agency for evoking spirit of international brotherhood. The ideal of brotherhood is more readily advanced through Art, because thereby we experience both visually as well as invisibly the revelation of the Commonwealth of Beauty, whose inheritors we are. The evolution of humanity culminates in Beauty and Art. There is no question that Beauty and Art of Architecture are great factors in the new conception of life with an ideal of service to humanity. They are prime movers in the approaching evolution. Seers like Tolstoy considered Art as the means of ending hostility and warfare. Foremost physicists like Eddington and Jeans, great psychologists

like Jung and Meader, have signed peace treaty between Religion and Science. Simultaneously with the rebirth of Science, have been noticed the first indications of a spiritual awakening in the West through Art. Radhakrishnan has presented before the world a new philosophy of idealism born out of an actual realisation of the realities of life. His message of faith in the spiritual values of life seeks to transform the war-weary world with exploited masses into a temple of trust and bliss.

In reviewing some designs and photographs of Modern Indian Architectural construction executed by the present writer, which had been exhibited in the Roerich Museum, New York, Dr. Harvey Wiley Corbett, Chairman of the Architectural Commission of the last World Fair in Chicago, wrote in the American Journal "Architecture" with reproduction of some of the designs :—

"We of the West, especially here in the United States, concerned primarily with our own progress, commercial and cultural, immersed in our own problems and difficulties, are hardly conscious of India with her teeming population two or three times the size of our own. Here is the oldest continuing civilisation of which we have a record, architecture, sculpture, painting, crafts that have been slowly developing through the centuries while we pride ourselves on our achievements of 200 years at the most.

"India is threatened by the march of western civilisation. The world may lose so much of real value in art, philosophy and spiritual force that we should look with interest and keen attention to the effort now being successfully made by Mr. Srischandra Chatterjee, Architect, to establish a real renaissance of Indian Architecture for his own country......Mr. Chatterjee also realises that the true functional expression of the people rests in their architecture and allied arts. Their spiritual and philosophic beliefs are best expressed through this medium. While he realises that India must come abreast of modern

trends in town-planning, sanitation and commercial development, he still knows that through the preservation of her arts she will retain her individuality as a people, and, therefore, retain for the world those rare qualities of spiritual value which the onrush of industrialism has so seriously threatened."

As the Departmental Editor of Architecture and Arts of the latest edition of the Encyclopædia Britannica, and as the President of the Architectural League of New York, who has recently produced the Rockefeller Radio City in New York, one hundred storied, the loftiest and the most gigantic sky-scraper in the world, besides being himself a sculptor and painter-artist of eminence, Dr. Corbett's appraisement of the æsthetic and spiritual value of Indian indigenous architecture and his implicit confidence in the bright future of Modern Indian Architecture should be instructive and inspiring to the people of all nations in this age.

Yes: India has immense treasures, material and spiritual, to offer to the International Temple of Arts and if, as is generally conceded, Architecture is the father of all the fine arts, each of which he has always drawn to himself for his own purposes, thereby stimulating each and every one of them, then India can no longer afford to remain indifferent to the duty of re-establishing its own place, a most important place, in the architectural activities of the world. If India allows itself to remain obsessed with the march of mere Materialistic Civilisation, the world, as Dr. Corbett has eruditely pointed out, will lose much of supreme value in philosophy and art, and in general the spiritual forces that make for the real progress of humanity.

NATURE AND ARCHITECTURE

In all countries and in all ages, architecture developed out of local conditions, with due regard to the inspiration derived from

Nature. The primitive tribes of humanity have left imperishable records in the forms of cave-paintings as to their æsthetic outlook, psychology and their emotional reactions to the phenomena and forces of Nature. Symbolism of Nature and super-Nature was evolved by the pre-Aryan Indians of the Indus Valley more than five thousand years ago. An animal, a bird, a flower or any other natural object was the totem of each of the tribes which inhabited Mohen-jo-Daro and other cities in the Indus Valley. Architecture in Magadha responded to the symphony of nature not out of harmony with contemporary Indian life and thought. The ancient Dravidians and the Kolarians were also totemic. Yet there are forest-dwellers in the Coromandel coast and in Ceylon who are known as "Paravas," *i.e.*, birds. The forms of plant and animal life were freely drawn upon and suitably modified by the ancients. Flowers, fruit-seeds, plumage of birds and animal claws fashioned their ornaments. Tree and Serpent (Nāga) worship prevailed even in the much later period of the Vijaynagar kings of the Deccan.

The Semitic Pharaohs of Egypt introduced themselves as "Hyḳos," *i.e.*, Shepherd Kings. Animals, sphinxes, scarabees as well as super-human figures of men and deities—Osiris, Isis, Horus and Ishtar—adorned the architecture of the Egyptians and Babylonians. The Chaldeans and Assyrians, the Hittities and Phœnicians followed the same kind of tradition. It was the spiritual liberation of the ancient ruling priest immuned from commercial speculations that built up the soaring temple in Sumeria from the crown of which the priest used to observe the movements of the planets and stars. Under similar impulses did the Pharaohs, sons of the Sun-god of Egypt, built their titanic temples along the valley of the Nile which stands to this day as an abiding monument of their spirit of Sacrifice. Crete and Greece developed architecture of noble simplicity, proportion and dignity also on the lines of the Egyptians with decorations modelled on

Nature—of animals, flowers, vegetables, fruits and foliage. Roman and Gothic architecture followed that of the Greek. The Romans went a step further towards a more realistic imitation of Nature. Gothic architects utilized every form of vegetable and fruit ornament to copy Nature faithfully. The Maya architecture in Central America which, it is said, was influenced partly by Indian art and culture over 1,500 years ago, also symbolised Nature. The temples, monasteries and certain mausoleums in Hindu and Moslem India as well as in Greater India and Indonesia are famous for their marvellous artistic skill in carving, sculptured decoration and paintings, also based on Nature's forms, to which moreover were given religious and sometimes super-natural, and spiritual significance.

The ancient forms and carvings of Bodh-Gayā, Sanchi, Bharhut, Karle, Nasik, Ajantā and Ellorā, and the later forms and sculptures of Bādāmi and Bhuvaneswar, Prambanam and Angkor, of Ahmedabad and Dilwara, and Taj Mahal and Madura—the delicate "apsarases" with their enchanting grace tempered with modesty, the faultless forms ot stone birds and animals, sportive yet timidly aloof, all appear instinct with life and motion, and yet making a subtle appeal to the noblest spirit of man in concord with the eternal music of Indian Architecture. It was all symbolical of the created soul striving for union with the Creator. In order to appreciate the creative talents of the Indian artists in the field of symbolism one has to study the carvings and sculptures of the Buddhist, Gupta and Pāla periods conceived and created in the Forest Laboratory of Nature: with what exuberance withal delicacy of fancy have they carved the tendrils of creepers, the opening buds of flowers, the majestic pose of the Mahābodhi Tree of Wisdom and the dynamic strength and vivacity of the wild animals of the forest? Nature was the great inspirer in the creation of Indian architectural arts, Indian music and dance. Plastic and pictorial art forms, music and dance are but the mediums of

Nature's self-projections productive of all creative conceptions. The architecture of India through its symbols took up the eternal melody of Nature. It was the beauty of Nature that impelled the Aryan Seers to chant the Vedic hymns and through their beautiful "yajña-śālās" to carry on the stream of inspiration for successive architectural constructions in Hindusthan. The Vedic "Ṛishis" announced for the first time in the history of civilisation the identity of Man's Soul with the Soul of Nature which was but the reflection of the Creator—the One, Supreme, Universal God. This idea of the Indian artist identifying himself with the spirit of Nature in all her phenomena is the keynote of all oriental arts, music and dance. Dance was the idealised transformation of the happiest dreams of the "Ṛishis" to numerous colourful images with the transparent body as medium of mind and spirit. All the sacrificial rites and composition of "mantras" concerned with the elements and aspects of Nature. The sacrificial hearth represented the organs of the human body. The object of sacrifices was to unify the soul of the worshipper with the soul of Nature and thereby transport his soul to the blissful abode of the God who himself is the creator of Nature.

The elaborate rituals of the Brahmans demanded the skill of decorative artists and craftsmen. In the elaborate sacrifice organised by the Ṛishi Vaśiṣṭha, as mentioned in the Rāmāyaṇa, the craftsmen who carved stone and wooden pillars were attributed high honour. The posts served as models for designing ornamental pillars and pilasters of the later Hindu temples. The lamps as also the soma-offering utensils, etc., similarly, served as models for Jain, Buddhist and Hindu temple furniture. In Hindu Śilpa Śāstra Architecture was termed as "Upa-Veda." The architecture of Pāṭaliputra may be viewed as frozen hymns glorifying the fascinating phenomena of Nature: as embodiments of the sacred doctrines of Upanishads, Indian Epics and Mythology. It was the ripe fruit of Brahmanic epical inspiration

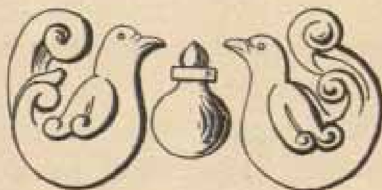
received under the spreading trees of the silent Himalayan forest. It repeatedly resounded the magnificent ordainments of profound Beauty and Wisdom manifested by the Ṛig and Sāma Vedas, the Rāmāyaṇa and Jātakas, narrated before the congregation of inquisitive disciples by the far-sighted sages in the Forest-Universities of "Naimishāraṇya" "Gurukula."

The "Toranas" (gates) at Sanchi and Bharhut unroll the epic vista of tropical India's luxuriant fauna and flora exuberant under the eternal canopy of the spiritual heaven resplendent with the "Infinite Light" of Śrī Amitābha who reigns supreme over a paradise of marvels enacted by Indra, Varuṇa and Rudra.

The myriads of saints and seers who have dwelt for milleneums among the songs of the Himalayas and Mt. Omi (China) and Mt. Hei (Japan) have bequeathed an inexhaustible treasure of spirituality and Beauty which Lāmās and hermits from Mongolia to the Himalayas have handed down until today. And they are looking forward to the coming of Maitreya, the Buddhist Messiah, to usher a dawn of Peace, Knowledge, Art and Architecture.

So, in past ages, Architecture was employed as one of the principal medium of worshipping God and Nature. It stood as an embodiment of Devotion and Sacrifice as observed by Ruskin in his "Seven Lamps of Architecture." Had it catered merely to the material needs of Man for leading a barrack-life, adhering to the conditions of Economy, Utility, Commercialism and Industrialism, as appears to be the aim and object of the Ultra-Modern Sky-scrapers of this relentless age of machine and commerce, and of speed and large-scale production, the glorious architectures of the by-gone days that each nation takes pride in, would never have reared their heads. The rigid formality of Ultra-Modern Architecture cramps human vision and impoverishes the soul, making the life as much mechanical as a gramophone record. It smothers the innate sense of Beauty.

The claims of Indian Architecture demand serious consideration of both Indians and non-Indians who love Art and Culture. Before sacrificing their age-old ideals at the altar of Hygiea at the dictation of the foreign architect, the architects of India should have considered that Indian design for building was a result of prolonged experiments through creative centuries in the indigenous materials available, the climatic requirements of the countryside and the national habits of life. That it was quite suitable for Indian life and needs, can best be judged from the records available regarding health, longivity and activity of early Indians when compared with those of the Indians of the present age. In the same way, the strength and durability of old Indian structure, built with indigenous materials, according to ancient building specifications, are very well known. Modern structures complying modern P. W. D. specifications, built primarily with various imported materials, could not outlive one hundred years. In most cases decay worked on them before fifty years. But old Indian structures, constructed of local materials with local specifications, lasted hundreds of years, mostly with very little repairs. Imported building materials, tactfully popularised by well-organised propaganda, have forcibly ousted the legitimate application of very suitable indigenous ones to the economic disaster of the country. The National Planning Committee have recommended strongly the regeneration and readaptation of Indian Architectural traditions and of Indian indigenous specifications for building constructions, for economic and cultural uplift of the nation.



V

MODERN ARCHITECTURE IN MAGADHA

The question is : will it be possible to revive and develop local architectural styles consistently with modern conditions of Economy, Utility and Sanitation as well as with social needs of the people of today? Will it be possible to treat the modern gardens and landscape planning arts with beautiful Indian feel and outlook?

Yes, it will be. Experiments have been successfully made in recent years in different provinces, which have not only fulfilled necessary conditions but have also foreshadowed bright future of Indian architecture. Experts have appreciated recent constructions in Indian styles and encouraged the movement for Indian Architectural Renaissance.[1]

The proposed National Hall in Patna, which is under construction, will be another attempt in that direction. It aims at an up-to-date development of local building arts, crafts and industries.[2]

Flanked by two mighty bastions on either ends at the front, reminiscent of the strength and dignity of the council house of the emperor Ajātaśatru as may be imagined, the structure will be dominated by one large sun-window, arch-opening, in its middle, designed after the ever-inspiring model of the "prabhā-toraṇa" which found sublime expression in the Lomaśa Ṛishi cave of the Barābar hills in Gayā, dedicated by Aśoka the Great himself. The form and shape of the "vesara" (vaulted) roof of the said cave-monastery which represents the halo of the rising Sun over the infinite

[1] See Plates XIV to XXVII, Plate VIII, Fig. 16 and Plate XXX, Fig. 46 concerning Modern Structures designed and directed by Mr. Sris Chandra Chatterjee, Architect.

[2] See Plate XVII Fig. 31 and Plate XIX Fig. 33.

expanse of the blue ocean, and, which subsequently inspired the creation of the vaulted basement of the Mahābodhi temple at Bodh-Gayā as well as some of the roofs in ancient structures shown in the reliefs of Sanchi or of the monasteries in Nālandā and elsewhere in various places in India—have been developed and adapted, as far as possible, in the case of designing the sixty feet wide roof spanning over the spacious Lecture Hall and dais of the National House. The roof of the well-known Sonarbhandar cave in Rājagṛiha of third century A.D. is also vaulted.[1]

The golden spire holding the Congress "Jhāndā" (Flag), symbolises the very soul of the structure. It suggests the fountain-head of a potent Creative Energy in the form of ribbed "Āmalaka," *i.e.*, "Mahāpadma" which denotes the nave of the Wheel of Creation, as is very striking at the crown of the temple of Mahābodhi. One "kalasa," *i.e.*, repository of "amrita," holding a lotus bud, will be placed over the "Āmalaka" which will support the National Flag. The combination of all these means an appropriate symbol of the irresistible urge that has been agitating the minds of the national leaders to create and stimulate one unified Indian Nation and Indian Constructive Nationalism. It will serve as a concrete expression of the dawn of Renaissance that has vibrated every cord of the Nation's cultural activity.[2]

The double-storied, wide verandahs with their heavy pillars of pre-Gupta order, under the spreading lean-to-roofs ribbed and richly coloured, with gilted, ornate, florid decorations, as well as Buddhistic railings, turrets, corner finials and circular towers with battlemented parapets (see the parapet on the Sanchi relief denoting the famous dream of Māyādevi) will recall the civic architecture of Rājagṛiha and Pāṭaliputra of the days of Bimbisāra and Samudra Gupta.

[1] See Plate III, Fig 5. Rājagṛiha, Sonarbhandar cave.

[2] See Plate XIX, fig. 33. Portion of Facade, National Hall, Patna.

The circular bastion may be viewed as a monument of Hindu-Moslem cultural and political solidarity. It is expressive of the artistic renaissance that took place during the golden rule of the Pathan ruler Sher Shah in the sixteenth century. Patna was made the capital of Bihar during his administration.

The little octagonal "chattris," projecting along the severe parapets, have been designed after those of Sher Shah's famous tomb at Sasaram which is claimed as a gem of Hindu-Moslem architecture.[1] Pathan domes were the development of Buddhist "stūpas." The cusped arches seen over the window openings of the bastions recall the arches of Rājagṛiha. Terracotta ornaments with patterns of square and octagonal lotus flowers were evolved during Gupta period. Their specimens have been exhibited in the Museums of Nālandā and Patna. The Indian Museum at Calcutta, in its group containing terracotta-finds concerning the Gupta temple in Bhumra in Central India, shows such specimens. Types of such terracotta and other floral carvings will beautify the Hall. Characteristic "Vajra-lepa," *i.e.*, stucco was applied on Maurya, Gupta and Pāla stūpas and monuments. It defied ravages of Time for centuries after centuries to the durability of structures for thousands of years. Although in a somewhat modified specification of less strength, stucco plaster is still current in Rajputana, Central India and elsewhere. Its traditional specification in present character will be enforced in plastering certain portions of the interior. The plinth moulding and several other mouldings, and certain stone carvings, will follow traditional technique.

The rooms and the Central Hall will be treated with Indian feel. Special care will be taken to decorate the Hall with impressive pillars, galleries for ladies and oriental proscenium, with elevated platform for lecture or theatrical performances. In the event

[1] See Plate XIII, Figs. 23 and 24, Sher Shah's Tomb.

of Indian histrionic arts, dramas, dances and musical soirees being conducted therein, the architectural environment inside the house will not fail to maintain consistent harmony with the tones and tunes of the performances.

Scenes depicting memorable events in the life of Bimbisāra, Chandragupta, Aśoka, Samudragupta, Sher Shah, Makhdum Sharaf-uddin and Guru Govind Singh will be painted, or sculptured in low reliefs, on the walls of the Hall. Metal furniture for lighting installation will be made to match with the surrounding. Rajmahal slates to be laid on the lower floors. 'Jalis,' friezes and some carvings will be made of Chunar stone.

Wooden joineries and wooden furniture will be of special design, simple and artistic. Modern vulgar paints and loud varnishing to be scrupulously avoided in favour of two or three coatings of wood-oil which, as the Greater Indian wooden temples and monastic structures demonstrate, will bring about a golden, silken lustre to the wood which, in successive years with further applications, will enhance its strength and beauty. Only those who have travelled Burma, Siam, and China, have noticed the effect of such wood-oil which modern Indian people cannot even imagine. Ancient Indian specifications included application of wood-oil. Wooden battens seen below the great vault of the Karle cave, dating 2nd century B.C., support the argument.

Metal industry and stone craft were developed in Rājagṛiha and Nalandā. Large scale brass and bronze images, metallic lamps and utensils were manufactured in Nālandā University. The traditional technique of Nālandā metal industry was transplanted in Southern India, Nepal, Tibet and elsewhere to the flowering of such magnificent bronzes as Prajñāpāramita, Tārā, Padmanābha,—" Ārati-Pradīpa ", " Haṃsa " type of incense-burner, etc. It is desired to revive the metal industry of the province which is about to die. Door-handles, brackets, other

fittings, and furniture for electric installation, will be prepared in the city of Patna in suitable metal, with oriental feel.

Designs for out-houses, compound gardens, compound walls and gates have been attempted with simpler outlook, in no way antagonistic to the general character of the principal composition.[1]

[1] See Plate XXIV, Fig. 39. Gateway to Magadha.

VI

AGENCY FOR RESUSCITATING THE ARCHITECTURE OF MAGADHA

It may be hoped that the National Hall in Patna, if it is constructed on right lines, may, for all times to come, inspire all future building projects in the countryside in favour of Indian styles of architecture and thus tend to maintain the glorious tradition of one vitally important national cultural expression and foster the finest fruit of the tree of Indian civilisation. In course of time, with increasing strength, popularity and proper development of modern Indian architecture, future generations as they will then be trained in well-organised schools of Indian Architecture, will usher a real renaissance of Indian arts and culture. The coming school will tend to develop the innate artistic forces of the Indian people, on the background of Indian culture, to express the spiritual soul of Indian Art out of which will flower the noble spirit of Internationalism.

And with the regeneration of India's architecture a host of allied arts, crafts and industries are bound to grow. The acute economic distress and the problem of unemployment will thereby be relieved to a considerable extent. Real "Swaraj" will be obtained in the sphere of House-Building art and industry.

Architecture is the Father and repository of other fine arts like Sculpture, Painting, Craft and Metal industry. Unless the architecture of India is rescued, developed and propagated, there is absolutely no chance for the growth and thriving of the other items. The truth of this statement must have been realised by the present generation of painters and other artists who are languishing for want of support. All the academies of fine arts organised by the present generation, and

engaged in the production of sculptors and painter-artists, have either ceased to exist or are carrying a precarious existence anyhow. This lamentable result is due to the divorcement of Indian architectural industry in general.

Fergusson and Havell were practical architects, acquainted with architectural-engineering and cultural history of the world. Their ambition was to water the tree of Indian architecture so that it could branch forth into generous and abundant flowers and foliage of sculpture and painting. But, after the retirement of the latter from India, in the last thirty years, Indian professors, lawyers, journalists and others have continuously pleaded for the revival of sculpture and painting only, although with the very best of intention. Fine arts branches of literary and oriental conferences have advocated the claims of Indian Painting, Sculpture, Music and Indian Histrionic Arts with very little reference to Architecture, if at all. Unfortunately their neglect of Indian architecture has seriously hampered the growth of Indian fine arts in general. This utter neglect of the Nation's Architecture has been possible in India only. No other civilised nation has ever ignored the claim of its national architecture as the modern Indian has done.

A great temple of ancient India with its magnificent "Nritya Maṇḍapa," its pillared Assembly Hall (Sabhā Maṇḍapa) and its vast corridors, meant a school for the boys, a college for the scholars, a picture gallery and museum for the masses and a faithful place for conducting dramatic performances and national dances. The history of the world has several times witnessed the phenomenon that great national awakenings were characterised by the regeneration of fine arts and literature, and there was always a revival of architecture which held all other fine arts in its embrace.

The value of architecture and its place in national life have everywhere been significant. National architecture is rooted on the soul of national life. Its forms and styles are moulded by the character of

the people to whom it belongs. So also is the character of the people influenced by the architectural environment they create for themselves. Students of schools and colleges are bound to draw inspirations for stimulating their national character from the architectural environments they live in or move about. Our educationists and leaders must take a note of it. One finds among most of our leaders the absence of well-defined ideas regarding many vital elements that make our corporate life truly great and the quality of national life excellent. As a matter of fact, on account of this colossal ignorance of the essential elements for the building of a healthy nation, popular opinion in this country has practically nothing to say on most things of importance. Let not our leaders confine all their energy to political, economic, scientific and literary pursuits merely. They can also, simultaneously, strive for the rehabilitation of our great architecture and arts in general. Instead of pleading each and every time for the cause of Indian Sculpture and Painting, Music and Dance, the well-wishers of Indian arts should also, whole-heartedly, combine in rescuing the masculine art of architecture for which a strong organisation with masculine vigour and vitality is essential. Any attempt to safeguard the other branches of Indian Fine Arts eliminating the masculine art of architecture will be just like killing the soul of the Rāga Bhairava to make room for his dependent wives as Toḍi, Āsāvarī and Bhairavi Rāgiṇis.

The cultural value and utility of the basic art of Indian architecture cannot be denied. The heritage of Indian architectural traditions is precious. The nation should be made so enlightened as to use it with all devotion and not to cast it aside as something effete and useless. Indian life and culture can never be revitalised unless and until the national art and architecture of India are revived and developed. What a high level of culture was attained by Indians has best been judged from the monuments of Indian architecture. Archæo-

logical excavations in the Indus Valley have assigned to India the foremost place in the order of civilisation. Mohen-jo-Daro is claimed to be the first city in the world which was laid on thoughtful town-planning.

Architecture is the revelation of truth through the rhythm of form expressed in abstract materials. Architecture is an embodiment of the varied expressions of the various phases of culture all combined in one. Its universal language is pre-eminently the best medium of inculcating and propagating cultural ideals and beliefs. India will culturally be doomed to death if Indian Architecture is allowed to die of starvation. The unconditional surrender by the country of its glorious tradition to the exotic fashions of art is not warranted by any political or economic exigency. The indifference of the State, the ignorance of the University and the apathy of the City Corporation to the civic and national value of India's architectural arts and the contempts of so-called 'qualified architects' for the traditional architecture and its exponents, are the main factors to which the destruction of Indian Architecture is unquestionably attributable. The current trend of hybrid or Ultra-Modern architecture pursued by Indian architects gives a poor account of the creative genius of India. Architects, who trample upon the ideals and traditions of the great art of the country, ought to realise that art is a spontaneous self-expression and not a servile imitation. Traditions should be the legitimate basis of all modern and future styles of architecture in India. And India should be free both culturally and politically. Universities and Municipalities should join hands and save the architecture of India from threatened extinction.

With the regeneration of Indian Architecture, there will again be an all-round development of national activity including material prosperity of the country in combination with lofty spiritual ideals which aim at the unification of diverse thought-currents in order to attain reality—to love mankind and to hurt or offend nobody. Presently, it is not possible

through the efforts of the individuals to inaugurate and maintain Schools and Institutes of Indian Architecture for educating and training young men and, thereby, regulate æsthetic and spiritual aspirations of the people. Under the circumstances, Indian Universities and Municipalities can save the situation.

The Unity of the nation can be restored through faith in the philosophy of humane idealism. That idealism can be propagated by the cultivation of æsthetic faculty through Fine Arts and Architecture.

Both philosophy and architecture have to serve the identical aims of moral and spiritual elevation in order to solve the acute, complex problems that face humanity to-day. Yet we cannot ignore certain aspects of Materialism or discard what are blessings of modern Science. But we must not forget that when artistic life-current was strong and vigorous in ancient India, she attained greatness in all fields of activity, both spiritual and material, and when that current was at a low ebb, national life in every domain became stagnant. Pāṭaliputra is an eye-witness to that great period when floods of abundance and wealth flowed into the country through an extensive commerce with the East and the West. Both physical and applied sciences were assiduously cultivated in ancient Pāṭaliputra.

Let Bengal, Bombay and other provinces follow the example to be sponsored by the "creative Bihar" whose cultural and constructive achievements are too well-known to the lovers of art and culture—thanks to the creative Gupta emperors of Magadha.

BIBLIOGRAPHY

Vedic Index by Macdonell and Keith.

Jātakas (English Translation).

Mahābhārata, Rāmāyana, Vāyu Purāṇam, Agni Purāṇam, Āpastamba Dharma-Sūtras, Brahmavaivarta Purāṇam, Vṛihat Saṃhita by Varāhamihira, Kāmasūtra of Vātsyāyana.

Gayā and Buddhagayā by Dr. B. M. Barua.

Bharhut, Book III : Aspects of Life and Art by Dr. B. M. Barua.

Reports of Archæological Survey of India, 1915-1921.

Do. do. New Imperial Series, Vol. LI, by M. H. Ḳuraishī.

The Antiquities of Bihar in Patna by A. M. Broadley.

Life of Hiuen Tsang by Beal.

Travels of Fa Hien by Legge.

Glories of Magadha by Samaddar.

Rajgir in Ancient Indian Literature by Dr. B. C. Law.

Nalanda in Ancient Literature by Sastri.

The Monuments of Sanchi by Sir John Marshall.

Corporate Life in Ancient India by Dr. R. C. Majumdar.

Social Life in Ancient India by Dr. H. C. Chakladar.

Town Planning in Ancient India by Dr. Binode Behary Dutt.

Introduction to Indian Art by Ananda K. Coomarswamy.

A Guide to Nalanda by A. Ghosh.

Rajgir and its Neighbourhood by D. N. Sen.

Some Aspects of Stupa Symbolism by Anagarika B. Govinda.

History of the Aryan Rule in India by E. B. Havell.

Ancient and Mediæval Indian Architecture by E. B. Havell.

Ideals of Indian Art by E. B. Havell.

Arthaśāstra of Kautilya (Translated by Dr. R. Shama Sastri).

Buddhist India by Rhys Davids.
Footfall of Indian History by Sister Nivedita.
History of Indian Architecture by J. Fergusson.
The Carmichæl Lectures, 1918, on the Ancient History of India by Dr. D. R. Bhandarkar.
Mahāvaṁsa (English translation) by Geiger.
Kautilya (Social Ideal and Political Theory) by Narayan Chandra Bandyopadhyaya.

EXPLANATORY NOTES ON ILLUSTRATIONS

PLATE IV ANCIENT INDIAN CITY

Fig. 7. Royal Procession : Rajagriha

King Ajātaśatru, seated in his chariot, is accompanied by a royal procession, with a music party leading the procession, in Rājagṛiha. The chariot is drawn by a pair of well-caparisoned horses. His chief-queen with 'kanaka-darpana' (mirror) in her hand, attended by two maids of honour, is watching the procession from the balcony. Note the severity of the architecture which gradually developed into the ornate civic architecture of pre-British Rājputānā. Its arrangement, even to-day, is influencing facades of Indian houses. The form of the vaulted roof over the structure behind the balcony developed into that of the 'Vesara' roof of Nālandā (Pl. XI) and also into those forms of Vaital Deul temple of Bhuvaneswar, Telikā-mandir of Gwalior, Ānanda Pagoda of Pagan and elsewhere. Several streets, lanes and bye-lanes of Rājagṛiha, like those in Mohen-jo-Daro, were narrow and winding. 'Ganeś-mahallā' and 'Kachurī-galee' of Kaśi are reminiscent of those ancient types of quarters with narrow lanes. The tall pillars on either side, symbolising lotus stalks on 'kumbha's, are observable in Nāsik, Karle and many places of India and Further India. They influenced designing of 'surangdar' pillars of Rājputānā and of those pillars seen in the 'chandimandaps' of Bengal. The turbans dignify the status of the musicians who are playing on bamboo flutes and drums. That type of head dress as well as the apparel and ornaments worn by the ladies are adapted by modern Rājputs.

11—(1418B)

ANCIENT INDIA: RURAL ARCHITECTURE

FIG. 8. GIFT OF THE JETAVANA MONASTERY

Nestling among the fruit and flower-bearing trees of mango, bignonia and champaka there peep unassuming cottages sanctified and beautified with religious symbols and simple architectural ornaments. The three sanctums represent "the three favourite residences of the Buddha, the Gandhakuṭi, the Kosambakuṭi and the Karorikuṭi." The praying figure with joined hands on the right at the top is identified with Anāthapiṇḍikā the banker, purchaser and donor of Jetavana whereas that one on the left represents Jeta, the former owner. Their attendants are standing below. Similar type of cottage, as seen on the right side at the bottom, are found in rural Bengal and Malabar. One 'Ratha' in Mahāballipuram was designed after such structure.

PLATE IX ANCIENT INDIA: CIVIC ARCHITECTURE

FIG. 18. EVENTS IN KAPILAVASTU

The Descent of Bodhisattva is seen at the top. A procession is coming out of the city gates. From left to right, covering the bottom, clumps of trees are seen. They include fan-shaped palm, bignonia and mango. The 'Vesara' roofs over the verandahs are to be noted.

PLATE XIV MODERN INDIAN ARCHITECTURE

FIG. 25. LAKSHMI-NARAYANA TEMPLE OF BIRLA, NEW DELHI

The Kshatriya king of Ajodhyā, having claimed descent from the Sun, presided over royal sacrifices inside one sacrificial hut designed and erected in the form of a chariot which eventually developed into 'Sikhara'-Temple crowned by 'Āmalaka' (pericrap of the blue lotus of Visnu-Surya) and marked with a symbol of the Sun. Sun-windows used to pierce the 'vimāna'

i.e., 'sikhara' and serve the purpose of chimney for escape of smoke emitted from sacrificial fire inside the temple. The Mahābodhi temple at Gayā was a development of such earlier sacrificial hut as was the case with the said sikhara-temple of the Imperial Guptas of subsequent period. The recently constructed temple of Lakshmi-Nārāyaṇa, on the ridge of New Delhi, was intended to be a modern development of the ancient model into a new form of 'sikhara-temple' of Visṇu-Sūrya seated in a chariot. The group consists of three 'vimānas' : the one in the middle over the images of Lakshmi and Nārāyaṇa, and the other two over those of Śiva and Śakti (Durgā). It was the intention of the architect to symbolize the middle 'vimāna' with a stately figure of Sūrya driving seven horses, overlooking the rising sun, as the temples face east, provide sun-windows and carve four wheels like those of a chariot on the four corners of the stone basement as are seen in the Sūrya-temple of Konark in Orissa. Thereby the temple would represent a chariot with Visṇu-Sūrya as World Conqueror. The first smile of *usha* (Dawn, Lakshmi) would merge in the embrace of Nārāyaṇa (Visṇu-Sūrya) seated in the chariot. But such important items as Sūrya, sun-window and wheel-carvings on plinth were omitted in course of construction without any knowledge or consent of the architect. However attractive may have been the exterior character of the massive group, the interior has been affected by garish over-ornamentation and cheap oil-painting discordant with the epical music of the sky-scraping 'sikhara' and faulty in respect of grammar and composition of the architectural language. Much better result would have been achieved had simpler, congenial elements been introduced in decorating the interior and in places of the exterior. Nevertheless the experiment has been appreciated. The architect had to change the style of previously built structures with non-Hindu outlook to build the present one with the assistance of his pupil, Sj. M. L. Roy. Babu Bhadra Singh built all the masonry portion. The chief donor Seth Jugal Kisore Birlaji is to be congratulated for the temple.

PLATE XVII MODERN INDIAN DESIGN

FIG 30. HINDU UNIVERSITY

An artistic combination of all Classical styles of ancient Indian architecture, dominated by that of the Imperial Guptas, in evolving a neo-Indian style of strength, simplicity, dignity and character is a thing necessary to-day for effecting Indian architectural renaissance with international outlook. The design of the Hindu University is an attempt for such All-India Hindu style of architecture. It bears clear traces of the successive developments of Indian architecture, in the land of Magadha, from the age of Ajātaśatru down to the Moslem period. It also attempts at a harmonious blending of congenial elements from Dravidian architecture and culture.

The dome on each of the two massive circular bastions which symbolise the two mighty arms of the structure, is adapted from votive 'stūpa' which has in its background the same common Vedic tradition regarding the construction of funeral monuments in Eastern India as well as the construction of Buddhistic 'stūpas' of magnificent artistry for depositing the remains of the illustrious dead. The image of Śiva is also related to the 'stūpa' carved out with four Buddha figures overlooking four cardinal points. The Maharana of Mewar worships, as his family-god, one four-headed Śiva prototypes of which are not unknown in both Hindu and Buddhistic iconography. The said bastions are so designed as to unify common traditions. The messages of Indian saints and seers, emanated by the eloquent domes, will inspire creation, and foster the growth of a healthy nation with fraternal outlook.

The famous cave no. 19 of Ajantā has inspired the designing of the porch strengthened by the Gupta pillars and suitable for available materials. One low, colonnaded hall with vaulted *i.e.*, 'vesara' roof—which will discard unnecessary use of steel and weak imported materials—is provided on the first floor over the porch. The big clerestory window in the front is reminiscent

of the great 'chaitya' windows commanding Kārle and Ajantā which allowed sun light in. Insertion of coloured mica sheets or glass panes has rendered a modernised version of a 'chaitya' window, not inconveniencing the 'modern' Indian. The 'Makara', the ruler of the cosmic ocean into which the sun sinks each evening, is placed at the springing of the arch ('prabha torana') to unravel the mystery of creation. Figure of a 'Kinnara' has been placed at the top of the central hall as a symbol of Eloquence. The hall is spanned by a 'vesara' roof.

The combination of Magadhan (Gupta) and Dravidian art brought in the beautiful Hoysāla and Chalukyan styles of architecture. The 'sikhara' of the Buddha-Gayā temple prompted the Chola architect for the conception of the great 'vimana' of the Brihadisvara temple in Tanjore. Even the great creation at Ellora was an elaboration of the exquisite Virupaksha temple of Pattadakal with a dome like that of the Shore Temple at Mahavallipuram which, in its turn, evolved from a 'stūpa.' Other architectural members of the structure include replicas of Aśokan pillar, 'Garuḍa-stambha' of Samudra Gupta and metallic Lamp of Wisdom embossed in thin plate on the main front door of the principal hall.

PLATE XXI MODERN INDIAN DESIGN

Fig. 35. Nobleman's Residence

Recent excavations at Rājghat have revealed Gupta architectural arts with which Benares was enriched 1500 years ago. This design intends to introduce another style of Indian Architecture based on the tradition of the Gupta arts consistently with modern ideas and conditions. This suggestive specimen of the Gupta inspiration, with two lion-pillars flanking the 'Siṃhadwāra,' is stamped with a personality befitting the aristocratic demeanour of the Nobleman occupying the residence. It is dominated by one large arch-opening at

the middle-front designed after the inspiring model of the 'prabhā-torana' which found sublime expression in the Lomaśa Ṛishi cave of the Barabar hills in Gayā, dedicated by Aśoka the Great himself. The form and shape of the opening symbolise the halo of the rising sun over the infinite expanse of blue ocean. On each corner of the parapet will be erected a 'Deepa-Stambha' *i.e.*, lamp-stand to accommodate light inside. Best elements from Western Engineering and Architecture which can be assimilated to enrich modern Indian architecture have been included in the design. If constructed on right lines, uninterfered by uncalled for dictation, as has been experienced in several constructions, only one such structure may inspire all future building projects in the countryside in favour of Indian architecture.

PLATE XXII MODERN INDIAN DESIGN

Fig. 36 Clock Tower (Upper Portion)

As one form of modern development of the architectural traditions of Pāṭaliputra the design is made to suggest a sky-scraping Clock Tower crowned by a lofty temple-bell. The upper structure is to resemble a 'Jatā-Mukuta', gracefully tapering upwards, vanishing into infinity. As a solitary mass of supreme aloofness its transcendental appeal pervades through an eternal spirit of tranquillity and harmony.

A portion at the basement has been left out, the size of the block not allowing the entire design.

PLATE XXIII MODERN INDIAN DESIGN

Fig. 37 Simple House

Simplicity and economic utility are inherent in sharp-lined attractive forms of Ultra-Modern architecture. Modern Indian architecture can profitably absorb certain elements concerning designing and constructive principles from the same. "Simple House" has been designed with that idea behind. It is a composite of

the Gupta-Indian and Modern-American styles and considered suitable for middle-class men who cannot afford to build even moderately costly structures like the "Modest House", with modern simple feel, illustrated in Plate XX.

PLATE XXIV MODERN INDIAN DESIGN

Fig. 39. Gateway to Magadha

Agreeing with conditions of economy and utility, rooted on traditions of Magadha architecture, the structure has been so designed as to accommodate one 'Nahbatkhana' *i.e.*, Hall of Music, on two lines of double columns over plinths built of stone. On the top of that side of the structure which faces the Ganges, a relief of 'Natarāja' in bronze is to be seen in a pose of dancing with joy after creation, whereas on the opposite side (seen in the picture) the golden figure of 'Kuvera' shines as a symbol of proverbial wealth and prosperity of ancient India. The ceiling just over the gateway, below the Hall, as well as the intrado of the deep vault over the Hall, along the "radiant arch" springing on the floor, are to be treated with richly coloured paintings depicting some of the events from the Hindu mythology such as the churning of the ocean by 'Devas' and 'Asuras.' Fine Arts of Architecture, Sculpture, Painting and Music have been co-ordinated in the composition, which may be taken as a synthesis of the Vedic, Brahmanic and Buddhistic arts, to produce a somewhat new style suitable to modern materials and modern principles of construction.

At the first sight the design may appear top-heavy to some. But a scrutiny will remove the misjudgment. The upper portion, *i.e.*, the Music Hall, having no solid walls, will not mismatch with the lower portion in stone.

PLATE XXVI MODERN INDIAN DESIGN

Fig. 41 Śiva-Visnu Temple

It is a combination of the Gupta and Chalukyan architecture. It looks like one 'lingam' image of Śiva with the 'chakra' of

Viṣṇu at the crest. Figure of 'kirtimukha' *i.e.*, lion-dragon is seen at the top. This 'paurāṇic' animal, as a protecting deity, was, at the express desire of Śiva, used to be associated invariably with all Śiva temples of the olden days. It dominated the auras of 'śaivite' and 'vaiṣṇavite' images of the Pālas and Senas. Even it appears to have been associated with earlier cave temples of purely Buddhistic order.

The design looks elaborately ornamental. But it is neither costly nor difficult to work.

APPENDIX

INDIAN ARCHITECTURE: WORLD SYMPATHY FOR RESUSCITATION
(DEVELOPMENT OF GUPTA ARTS)

In appreciating the movement set on foot for the last eighteen years for bringing about a resuscitation of Indian architectural arts and industries through Indian Universities, Institutes of Indian Architecture, City Corporations and otherwise through actual constructions - prospects of which have been hinted at in the concluding pages of this publication—many distinguished persons from various countries have sent messages and letters. Following extracts from some of them will, it is hoped, strengthen the arguments outlined in the constructive scheme suggested by the author in this monograph as well as vindicate his claims for undertaking the responsibility of the arduous task.

The Modern Indian Designs, illustrated in this monograph, attempt development of exclusively Buddhistic, Gupta and Pala schools of Architecture which evolved in Pataliputra. Developmbnts of other Indian styles like the Hindu-Mogul, Chalukya, Dravidian, etc., have not been dealt with in this publication

MODERN INDIAN ARCHITECTURE

SUBHAS CHANDRA BOSE

Mayor of Calcutta, President, Indian National Congress

"Before I had the privilege of meeting Mr. Sris Chandra Chatterjee, the famous Indian Architect, I used to wonder when India would be able to evolve a distinctive School of Architecture, just as she had succeeded in developing a new School of Painting. Soon after this I came across some articles of Mr. Chatterjee in the papers, and I simply devoured them. Since then I have met Mr. Chatterjee in person and have discussed with him, and the more I have done so, the more has my admiration for him developed.

"Mr. Chatterjee appeared before us just in time as the pioneer of a new School of Architecture, distinctively Indian in character. He is fully responsive to Western and other foreign influences but after assimilating these and after adapting himself to modern conditions, he is able to give something new to India and to the world....I wish him success with all my heart—for I know that his success means the furtherance of the Renaissance of Indian Architecture and a further enrichment of the civilisation of the world ......

"I regard revival of Indian Architecture as an important aspect of our national regeneration. Art and architecture represent the finest embodiment of a nation's soul. And as the soul of a people awakens, it naturally finds expression in the distinctive art and architecture of that nation. Having this deep conviction within me, I have followed the activities of Mr. Chatterjee with the greatest interest. I have great admiration for the unbounded zeal and enthusiasm, which he has evinced for the cause he has taken to heart and I earnestly pray however formidable may be the obstacles, which beset his path, he may never have occasion to lose one particle of the innate optimism which has been the secret of his success.

"It is quite possible for the Calcutta Corporation to further the cause of Indian architecture...I do not know if it would be possibie to have an Avenue exclusively for Indian architecture, owing to legal difficulties, for the Corporation cannot force anybody to go in for a particular type of architecture.

Nevertheless, the Corporation can indirectly encourage Indian architecture. It is possible to have a Department of Indian Architecture for giving free advice to the citizens as to the type of architecture they should adopt. This Department may stock designs, hand-books, etc., for the use of the citizens and it may also carry on propaganda in various ways to popularise Indian architecture. Advantages may also be taken of Exhibitions for popularising Indian architecture among the people of Calcutta. And if Calcutta sets an example, other Indian cities are sure to follow.

But the point is who will listen to me ? People are far too busy with petty intrigues and insignificant squabbles to think of larger problems....I can only hope that Mr. Chatterjee will never lose his optimism."

INDIA OFFICE
White Hall, London
9th October, 1934

C. C. BISWAS, ESQ., C.I.E.,
CALCUTTA

DEAR MR. BISWAS,

The Secretary of State, The Right Honourable Sir Samuel Hoare, was interested to receive your letter......informing him that an Institution is being organised in Calcutta for the purpose of education on national architecture...... this enterprise has his best wishes...

W. D. Croft

INDIA OFFICE
Aldwych, London, W. C. 2.
12th October, 1934

HIGH COMMISSIONER FOR INDIA,
LONDON

DEAR MR. BISWAS,

......India boasts many magnificent works of indigenous architectural art and the tradition enshrined in them must not be allowed to fade, but should be fostered for artistic, national even international reasons. I accordingly welcome the venture of Sris Chandra Chatterjee and trust that it will encourage my countrymen to fit themselves to add to the glories of the past a superstructure in which the past and present will be triumphantly blended.

B. N. Mitra

BRITISH MUSEUM,
London, W. C. 1.
4th October, 1934

SIR GEORGE HILL, K.C.B.,
DIRECTOR AND PRINCIPAL LIBRARIAN OF THE BRITISH MUSEUM

I have read with interest the communication on Sris Chandra Chatterjee's proposed institution. The project will be of service not only to Indian architecture but to art in general.

66, PORTLAND PLACE,
London, W. 1.
10th January, 1935

ROYAL INSTITUTE OF BRITISH ARCHITECTS

...The Royal Institute of British Architects regards the study of Indian Architecture as an essential basis for the teaching of architecture in any School in India.

Ian MacAlister,
Secretary

23, RUTLAND SQUARE,
Edinburgh
5th October, 1934

JOHN BEGG,
PRESIDENT OF THE ROYAL INCORPORATION OF ARCHITECTS, SCOTLAND,
FORMERLY CONSULTING ARCHITECT TO THE GOVERNMENT OF INDIA.

......note that an Institution for the propagation of education in National Architecture is being framed ...I gladly send this letter as an expression of my most cordial sympathy.

CINNAMON HALL,
Penang, S. S.
17th October, 1934

HIS ROYAL EXCELLENCY PRINCE OF SIAM

...I heartily approve of the idea of founding in Calcutta an institution...... being both a lover of arts and a Siamese whose ancient civilization has derived its origin largely from India......I wish the School every due success.

Dumrong

Oslo
25th December, 1934

PROFESSOR DR. STEN KONOW
ACTA ORIENTALIA

......I am deeply conscious of the great importance of Indian Architecture and allied arts and crafts in India, not only for one understanding of Indian culture, but also for the general history of civilization.

Paris
15th November, 1934

LEAGUE OF NATIONS

...At a time when so many conflicting forces, both in the Western and Eastern hemispheres, are tending to trammel spiritual freedom, to reduce in an ever-increasing measure the possibilities open to pure intellectual activity in its contemplative action from which springs the beauty that finds expression in the Arts, the International Institute of Intellectual Co-operation is deeply gratified to learn of the formation of a great Indian National School of Architecture......treasures of ancient India will engender a spirit of intense harmony in present-day India and place other nations in the best possible position for appreciating its genius.

H. Bonnet,
Director

Vienna
20th October, 1934

AUSTRO-AMERICAN INSTITUTE OF EDUCATION

...The new movement in India which tends to develop the innate artistic forces of the Indian people and on the back ground of Indian culture to express the Indian soul will no doubt not only have the sympathies of Dr. Dengler, our Director, but all of those whose feeling extends beyond their own country, small or large, and who, despite averse conditions now, have not ceased to believe that the manifestations of the soul are more important than every thing else...

A. M. Schaemminger,
Assistant Director

Moscow, 56
5th December, 1934

THE U. S. S. R. SOCIETY OF CULTURAL RELATIONS WITH FOREIGN COUNTRIES

...we believe that the generous purpose of revival of Indian architectural style will be successfully accomplished ..

V. Linde,
Chief, Eastern Dept.

Paris VI
25th October, 1934

SYLVAIN LEVI

......It is indeed a happy day for an old lover of India when I see mother India vindicating the glorious traditions of her own culture, not in a spirit of defiance of other civilization, but with the noble aim of bringing her own past of collaboration and the making of a new world. Nothing can be more fruitful to a nation than looking back to her past in order to find therein directions for going forward. Architecture has been the pride of old India, I wish and hope it will be a pride of new India.

Athens
11th October, 1934

PRESIDENT, AKOAHMIA AOHNUN

Yo ır message......has been fully appreciated by this Academy...

G. Kemlourogly

Michigan
11th October, 1934

ANN ARBOR

......a School of Indian Architecture is needed for the development and Art in their purity...without being overshadowed by or mixed with the art of the West...Such school will be of great benefit not only to India but to all lands where art is prized. It will enable India to make, at last, her own individual, independent and important contribution to the cultural progress and enrichment of the world.

J. T. Sunderland

Washington
9th October, 1934

THE DIRECTOR GENERAL, PAN AMERICAN UNION

......congratulate...the important contribution which this newly established institution is certain to make to culture and civilization.

L. S. Rowe

Boston
8th October, 1934

MUSEUM OF FINE ARTS, BOSTON

......best wishes...from Ananda K. Coomarswamy, Fellow for Research in Indian, Persian and Muhammadan Art, in the Museum of Fine Arts, Boston.

Hungary, Europe
December, 1934

TRANSLATION FROM

THE JOURNAL OF HUNGARIAN SOCIETY OF ENGINEERS AND ARCHITECTS of December, 1934

......Hungarian architects or students, chiefly future professors, could go for study to India .....The theme of Mr. Chatterjee's life-work corresponds greatly with the activity of our unforgetable Odon Lechner who investigated after the old Hungarian Architectures and found their root just in India. So the idea of getting connected with architects and architecture of India more closely is timely now.

Stephen de Cserepy,
Architect, Teacher, University of Budapest, Hungary

Calcutta
7th October, 1934

DR. W. NORMAN BROWN, UNIVERSITY OF PENNSYLVANIA,
DIRECTOR, INDUS VALLEY EXCAVATION, INDIA

MY DEAR MR. CHATTERJEE

...Your purpose...is to continue in modern India the course of architecture pursued through the millenia of Indian civilization, but adapting that traditional architecture to the demands of to-day...seems to me admirable.

DR. SIR SARVAPALLI RADHAKRISHNAN, KT.

Our education at the present moment is defective on the side of the right training of emotions and artistic culture. And any attempt to remedy this deficiency is always welcome.

It is my sincere hope and desire that those in Municipalities and District Boards and Universities who are in a position to assist Mr. Chatterjee and utilise his great talents will do so in larger numbers in years to come.

SIR C. V. RAMAN, KT., N. L.

India to-day, if she is to be true to herself must seek to find her own soul in architecture. If there is any aspect of æsthetics which has an intensely practical value, it is architecture...The endowment of education in architecture with Indian outlook is much needed in India.

THE VICEROY'S HOUSE
New Delhi
16th April, 1934

MILITARY SECRETARY
TO THE VICEROY

DEAR MR. CHATTERJEE,

...I showed your letter to Their Excellencies Lord Willingdon and Countess of Willingdon, who ask me to inform you that although they cannot help you effectively at the present juncture, yet at the same time wish you good luck in your efforts to start an Institution in India to train Indian students in Indian Architecture.

GOVERNMENT HOUSE
Calcutta
28th August, 1934

PRIVATE SECRETARY
TO THE GOVERNOR OF BENGAL

DEAR MR. CHATTERJEE,

...His Excellency Sir John Anderson asked me to say that he had heard well of your work and that your new venture has his good wishes.

HUZUR CUTCHERY
Trivandrum

CHIEF SECRETARY
To GOVERNMENT OF TRAVANCORE

DEAR MR. CHATTERJEE,

I am directed to inform you that His Highness the Maharaja has been pleased to accept the invitation of the Executive Committee of the Academy of Indian Architecture to become a Patron of the Institution.

THE RT. HON'BLE SIR AKBAR HYDARI, KT., NAWAB HYDAR NAWAZ JUNG BAHADUR, PRIME MINISTER, H. E. H. THE NIZAM'S STATE

DEAR MR. CHATTERJEE,

...I am very glad that the help which the Nizam's Government has been able to give to your All-India Exhibition of Indian Architecture,..I am sure it will create a real interest in and serve to establish a true national School of Indian Architecture.

SIR M. VISVESVARAYA, K.C.I.E., M.I.C.E., FORMERLY CHIEF ENGINEER AND PRIME MINISTER, MYSORE STATE, AND PRESIDENT, INDIAN SCIENCE CONGRESS

...I am strongly in favour of the scheme prepared by Mr. Sris Chandra Chatterjee...He deserves encouragement and patronage.

VICEROY'S APPRECIATION

On the occasion of the recent visit that Their Excellencies the Viceroy and the Marchioness of Linlithgow paid to Sarnath, Their Excellencies were shown round a magnificent piece of architecture which was being constructed for accommodating Buddhist pilgrims. The architecture has been designed by Mr. Sris Chandra Chatterjee, in strict conformity with ancient Buddhistic Style. Their Excellencies were highly pleased to see the attractive structure. —*Associated Press*.

SIR FRANCIS YOUNGHUSBAND

In presiding over the Unity Conference...Sir Francis Younghusband, K.C.I.E., K.C.S.I.,...dwelt on the mission and achievements of the distinguished Indian Architect, Mr. Sris Chandra Chatterjee, who had been, he said, working so much to bring a renaissance in Indian Architecture. As President of the India Society, London, he had organised lectures and held exhibitions on Indian Art and Painting. But he wished Mr. Chatterjee could go at an early date to London and other countries in Europe and America and address the Society and other cultural centres on Indian Architecture of which he had been a great authority.—*The Calcutta Municipal Gazette*.

New York (By Mail)

DR. ELY JACQES KAHN, CHAIRMAN OF THE COMMITTEE ON ARCHITECTURE OF THE ARCHITECTURAL LEAGUE OF NEW YORK

Just returning from Paris, after visiting the Colonial Exhibition,......I have been able to analyse, with a group of American architects, the work of Mr. Sris Chandra Chatterjee...I recognise in his work the same spirit of enthusiasm for his own nation's architecture, realizing that he has, at the same time, produced important works which are final tests of a great architect...The glorious past of India is too precious to have it hurt in any way, and, with the ability of its own sons to carry on its work, there is no question but that, in such direction, lies the future of the great modern Indian architecture.—*Free Press*.

MR. E. B. HAVELL, OXFORD

Mr. Sris Chandra Chatterjee's work interested me greatly. He is doing a great work towards the revival of Indian Arts. ...It seems to me that he is working on the right lines and has a grasp of the problems to be solved *i.e.*, to adopt the living traditions of Indian building to present needs by a real co-operation between the designer and the builder.

Extract of comment from ARCHITECTURE, NEW YORK, of July, 1931, by DR. HARVEY WILEY CORBETT. M.A., M.ARCH., LITT. D., LL. D., President, Architectural League of New York, Departmental Editor for Architecture of the New Edition of Encyclopædia Britannica and Chairman of the Architectural Commission of the last World's Fair in Chicago :—

......We should look with interest and keen attention to the effort now being successfully made by Sris Chandra Chatterjee to establish a real Renaissance of Indian Architecture for his own country.

Chatterjee is a man of broad culture, has travelled extensively, and knows what is best of Western science and engineering. But he also realises that the true functional expression of a people rests in their architecture and allied arts. As a practising architect he has erected many buildings in which he definitely shows not only a keen sense of rational plan arrangement fitting modern needs but great architectural skill in retaining and adapting motives which recall beautifully the best of Indian art and yet are not lacking in originality. He possesses that rare faculty of seeing his problems from a board constructive angle and at the same time deals with the most minute details of sculpture and ornament with studied care and characteristic spirits. He points the way whereby real achievements in city plan could be accomplished.

"There is the strong probability that India may suffer, as Japan has already done, from the roiling of her stream of art by Western influences. Standing steadfastly against such loss of their country's personality in art are a few such men as Sris Chandra Chatterjee."—EDITOR. ARCHITECTURE, of July 1931.

New York.
20th January, 1931.

DR. MISS FRANCES GRANT

VICE-PRESIDENT, ROERICH MUSEUM

DEAR MR. CHATTERJEE

Dr. Harvey Wiley Corbett has been so splendidly impressed with your work and your enthusiasm for your native art that he is hoping to have your efforts represented in the Chicago Exhibition. In interesting as you did also Dr. Coomarswamy, Dr. Offner as well as Mr. Claude Bragdon you have touched some of our best people in these fields. Mr. Saylor, Editor of Architecture, as well as Miss Helen Comstock, Associate Editor of The International Studio, are to use your drawings. The Exihibition of The Architectural League this spring, planned by Mr. Raymond Hood, President of The American Institute of Architects, and your lecture before the League will do much toward bringing your point of view before architects of this country. I know how much interest was aroused by your lecture before the classes of the Master Institute of Roerich Museum.

Translation of the REVIEW made by MR. STEPHEN DE CSEREPY, Architect on the City Planning at the University of Budapest, Hungary, of Mr. Chatterjee's works in "BUILDING ART—BUILDING INDUSTRY" of June, 1932 :—

......In America and England, Chatterjee is very well-known and very highly admired by the most celebrated architects. Every one of the highest societies paid tribute to his original lectures, which proved his great patriotism and his scholarship......As Rabindranath Tagore creates poetry in India, so does Chatterjee architecture : he is one of the greatest living architects. ......

DR. ABANINDRANATH TAGORE, D.LIT., C.I.E.

...I am convinced that you can practically demonstrate that Indian architecture can be revived without prohibitive expenditure. But still when I think of the difficulties that stand in your way, I cannot help admiring you and thank you from the bottom of my heart for your indomitable courge, your enlightened enthusiasm and your indefatigable labour to restore our heritage to us and it is my earnest hope that your path be easy for you in this great work you have undertaken.

SETH JUGAL KISHORE BIRLA

...Fear of cost should no longer stand as a stumbling block in the way of the renaissance of our indigenous architecture. The temples and edifices which are under construction on the Ridge of New Delhi for the LAKSHMI-NARAYAN TEMPLE and HINDU MAHASABHA, suggest a great future of Indian architecture. Sris Chandra Chatterjee is to be congratulated for the designs and directing the constructions....

DR. B. N. DEY, D.SC. (GLASGOW), M.I.E., CHIEF ENGINEER, CORPORATION OF CALCUTTA.

While in London I had heard and read about Mr. Chatterjee's achieve ments that he had been working single-handed, and against tremendous odds... A man of his talent would certainly have met with ample patronage in Europe and America. I am sorry that he has had to work so hard to gain a footing in India.

IN A STATEMENT TO THE FREE PRESS PUNDIT JAWAHARLAL NEHRU, THEN PRESIDENT TO THE INDIAN NATIONAL CONGRESS, OBSERVED :—

"Although I am engrossed in politics I should like to assure that I am very much interested in the work Mr. Sris Chandra Chatterjee is doing. As an eminent architect he is producing buildings based on old Indian styles, beautiful and yet not very costly, and his endeavours appear to me to be praiseworthy and deserving of encouragement.

MAGADHA ARCHITECTURE AND CULTURE

OPINIONS

MR. S. C. MAJUMDAR, C.I.E., B.Sc. (GLAS.), M.I.E., Chairman to the Institution of Engineers (India) and Chief Engineer and Secretary to P. W. D. (Irrigation), Bengal, makes the following comment :—

My esteemed friend Mr. Sris Chandra Chatterjee has requested me to write a few words on his interesting monograph on the Architecture and Culture of Magadha. Being by profession an Irrigation Engineer it would be presumptuous on my part to attempt a critical review. Rather I would say I have read it with profit as I have learned many things about which I was ignorant, for instance, the elaborate town-planning including what looks like stone sewers, which the learned author has brought to light by his researches. I feel that every patriotic Indian should be grateful to the learned author for the pain he has taken in unfolding a glorious chapter of our ancient civilization and architecture.

DR. RAJENDRA PRASAD, M.A., M.L., D.LITT., President, Indian National Congress, and Chairman to the " Bhāratiya Itihās Parisat " observes :—

" My dear Sris Babu,

I have read with great interest and much profit your article " Magadha Architecture and Culture." It shows how you have studied the subject with the eye of an architect and how you are trying in your own creative work to combine the best of the past with the

best of the present. I can only hope that the National Hall * will be worthy of the Province and its great past and worthy, too, of the greater future that India is working and living for.

Yours sincerely,
Rajendra Prasad.

P. S.

I shall certainly write and speak to Dr. S. Sinha about the Faculty of Architecture."

DR. B. M. BARUA, M.A., D.LIT. (LOND.), Head of the Post-Graduate teaching in Pali, Calcutta University and author of some valuable publications on Buddhist Art and Literature, has remarked :—

"I have read with a keen personal interest the monograph on 'Magadha Architecture and Culture' by Mr. Sris Chandra Chatterjee, Sthāpatya-Viśārad, Member of the National Planning Committee. I cannot help mentioning that, highly interesting as it is, the work will certainly be appreciated as a masterly exposition of the present Renaissance movement in India.

The history of the Fine Arts and Culture of Magadha (Pāṭaliputra) which was the fountain-head of a great civilization of the ancient world, has been systematically yet briefly, dealt with from the earliest times. What is specially interesting and striking is the remarkably thoughtful and suggestive scheme put forward by the author regarding the resuscitation and the preservation of the inspiring tradition of Indian Architecture and linking the same with the trends of modern Indian Architecture.

* Under construction at Patna, designed by Sris Chandra Chatterjee, Architect.

Even with the limited opportunities at our disposal, it is still possible to create and stimulate another classical style of Indian Architecture which will not fail to evoke an international appeal and to broaden human outlook on life. The spiritual message of Indian Architecture, as observed by Mr. Chatterjee, who himself is a Master-Architect of world-wide fame, will itself be a thing of special value to this distracted world.

The monograph may be judged as a tangible result of the writer's quest for Truth and Beauty for which he has travelled over the world, and of his intimate knowledge of the architectural history of the world.

Professors, students and all lovers of Fine Arts and Culture will, I dare say, be benefited by reading Mr. Chatterjee's exposition. It is rich with constructive ideas and attempts at the solution of some of the complex problems of modern life.

The design of the proposed National Hall at Patna appears to me to be charmingly beautiful and easily workable. It is a marvellous fruit of the best arts and cultural aspirations of Magadha of the past that can be suitably adapted to the requirement of the development of India's architectural enterprises."

DR. D. R. BHANDARKAR, M.A., PH.D., F.R.A.S.B., Acting Secretary, Indian Museum, Calcutta, formerly Carmichael Professor of Ancient Indian History and Culture, Calcutta University, and Chief Editor of "*Indian Culture*," writes :—

The memoir "Magadha Architecture and Culture" by Mr. Sris Chandra Chatterjee is as learned as it is interesting. It is in fact a scholarly production which is worthy of publication in any learned journal. By reading the same one can beautifully picture

to oneself how Magadha was in the early period. His noble mission for effecting a Renaissance of Indian Architecture deserves support and encouragement.

His ideal and scheme for the resuscitation of old Indian architecture and its application to modern Indian conditions of life are very admirable. But it will not be possible for India to achieve this object unless an optional group of paper on this subject is introduced by the Indian Universities. As the Calcutta University is the premier University in this subject, they can give effect to this idea, not only in Bengal Engineering College but also under Ancient Indian History and Culture in M.A.

MR. N. C. CHATTERJEE, M.A., P.R.S., BAR-AT-LAW, Working President of Bengal Provincial Hindu Mahasabha, suggests :—

In a prosperous country under a good government as India was in the happy days of Aśoka and Vikramāditya, an all-round progress was inevitable concerning all aspects of Art and Culture. Gupta arts were tangible embodiments of Hindu-Buddhistic yearnings for transcendental harmony and tranquillity. Hinduism absorbed congenial elements of Buddhism and Jainism and, ultimately, succeeded in building up a mighty nation with spiritually æsthetic as well as secularly materialistic outlook. The sum total of Hindu-Indian national expressions which evinced through various channels of thought and action is best accounted by masterpieces of Indian architectural monuments scattered over Hindusthan which, as Mr. Sris Chandra Chatterjee has beautifully expressed in his illuminating monograph, are so many frozen hymns of Indian Epics and Classics, Upanishads and Jātakas.

The precious traditions of India's architectural arts must have to be developed for all times to enable the soul of the great nation to express its noble spirit of Beauty, Truth and Harmony. Another novel phase of Indian Architecture is bound to evolve in modern

India. To the war-weary world it will interpret India's message for peace and good-will.

But that international architecture is not possible through the efforts of a single individual like Sris Chatterjee. He has done much more than what could be expected of him. He is not a mere visionary theorist, art-critic or erudite propagandist. He is also a creative architect, an aspiring builder of nation to every inch of his head and heart. For long years he has studied various complex problems that confront the revival of Indian architectural arts. He has made successive experiments on the lines to the appreciation of leading architects and technical experts all the world over. He is a self-less worker. And his supreme sacrifices can hardly be surpassed. "In the history of Architecture," remarks an eminent art critic, "he takes his stand side by side with Christopher Wren and Ingo Jones. Probably he will measure head and shoulder higher because under modern political and other adverse conditions he has had to contend with and overcome greater difficulty, mightier concerted oppositions, unaided and discouraged, than those geniuses ever imagined." He had to manage single-handed all sorts of technical and propaganda work for which he has spent every copper from his own pocket.

As a student of Indian art and culture who has tried in his humble way to actively encourage Indian arts and architecture, I suggest the organisation of an all-India committee of experts under the guidance of such persons as Radhakrishnan, Syamaprasad, Sapru and Rajendra Prasad at the earliest possible date for the rescue of Indian architecture. This vital problem can no longer be ignored. Indian Universities, Indian Municipalities, Institutes of Engineers and Art Academies must join hands with the proposed organisation. The University of Calcutta must take the lead in establishing a Post-Graduate Chair of Indian Architecture. The Calcutta Corporation must on principle encourage study and construction in national styles of architecture.

Following the examples of European and American Universities, this premier University in India should also maintain an Architect whose duty, besides other work, will be to prepare schemes and designs for city, village and colony planning, with national feel, and publish type-designs for urban and rural habitations, in compliance with prevailing conditions on Indian life and living, and consistently with indigenous specifications and building materials as much as possible and desirable. It is to be regretted that in the year of grace 1942, the premier University of India has not initiated any planned scheme of training in Indian Architecture. Other provinces will follow Calcutta's lead.

Had Sir Asutosh Mookerjee been alive he would undoubtedly have given his heartiest support and all facilities to Sris Chandra Chatterjee whose genius attempts at carving for India one more prominent niche in the International Temple of Learning. It was Sir Asutosh who brought Radhakrishnan, Raman, Bhandarkar and Barua to his University. His successors should co-operate with the nation-building activities of Mr. Sris Chatterjee and create a real school of Indian Architecture under the auspices of the Calcutta University.

In appreciating the writing on Magadha, Mr. Percy Brown, A.R.C.A., C.B.E., Secretary and Curator of the Victoria Memorial, Calcutta, formerly Principal of the Government School of Art, Calcutta, concludes :—

Mr. Sris Chandra Chatterjee's indefatigable efforts to revive Indian architecture as a true expression of Indian Culture have long been known to those interested in all forms of æsthetic endeavour. By his lectures delivered in every part of the country, and his articles published in the press, Mr. Chatterjee appeals to a wide field. Such an intelligent and enthusiastic mission should certainly bear fruit, and bring about a form of national architecture deserving of the energy and selflessness of its pioneer and author.



PLATES



FIG. 1. Rājagṛiha: Maṇiyār Maṭh



FIG. 2. Rājagṛiha: Cyclopean Wall
(Reproduced from Dr. B. C. Law's Rājagṛiha)



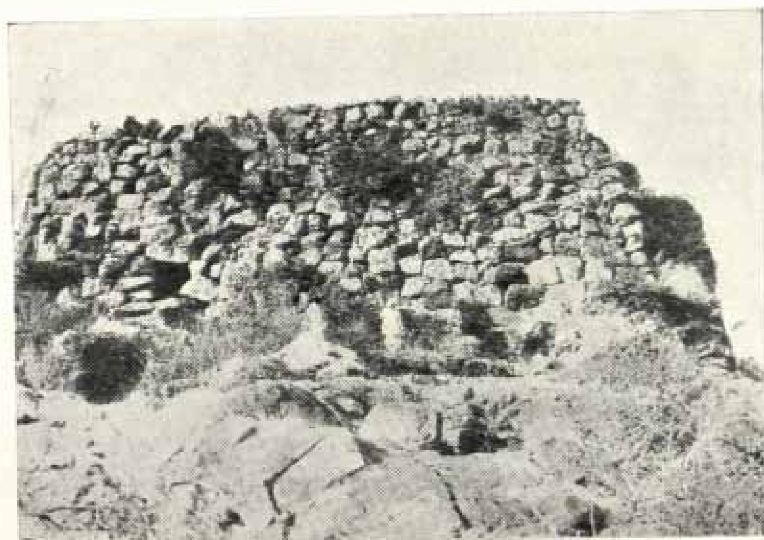


FIG. 3. Rājagṛiha : Jarāsandha-kā-Baiṭhak

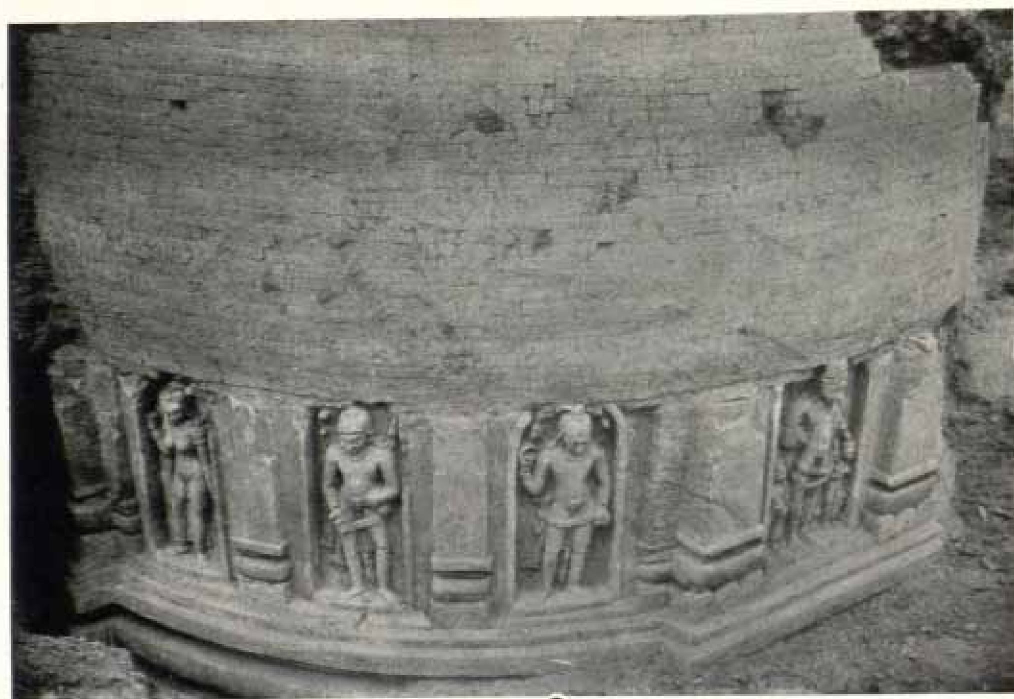


FIG. 4. Rājagṛiha : Stucco Figures at Maṇiyār Maṭh



FIG. 5. Rājagṛiha : Sonarbhandar Cave



FIG. 6. Rājagṛiha : South Gate



Fig. 7. Ancient Indian City
(Copyright reserved by Archæological Department, Bhopal State)



Fig. 8. Ancient India: Rural Architecture
(Copyright reserved by Archæological Department, Bhopal State)



FIG. 9. Elephants run amuck



FIG. 10. Mahābodhi Temple, Buddha Gayā



FIG. 11. Pāṭaliputra Excavation : Ash Funnel



FIG. 12. Pāṭaliputra Excavation : Wooden Platform



Fig. 13. Pāṭaliputra Excavation: Mauryan Pillar



Fig. 14. Pāṭaliputra Excavation: Terracotta Plaque



Fig. 15. Lomaśa Ṛishi Cave



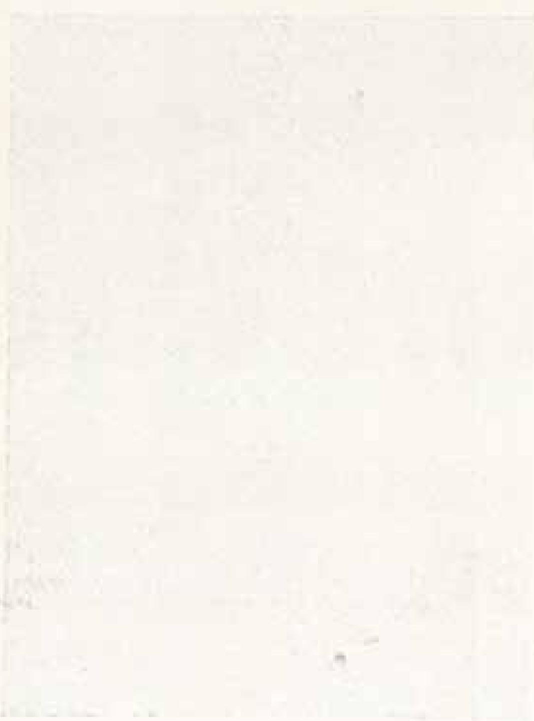






FIG. 16. Flower Pot embedded in grass plot: Lower Vessel for Season Flowers



FIG. 17. Vajrāsana

(Reproduced from Dr. Barua's Barhut, Book III)

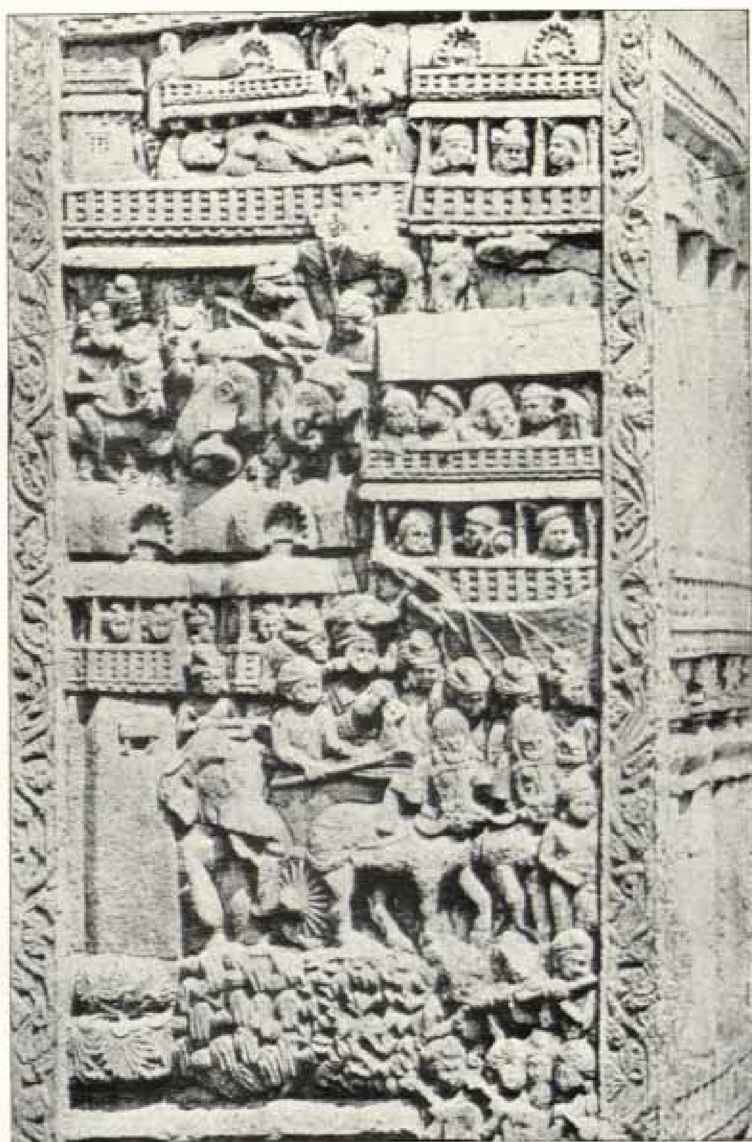


FIG. 18. Ancient India : Civic Architecture
(Copyright reserved by Archæological Department, Bhopal State)

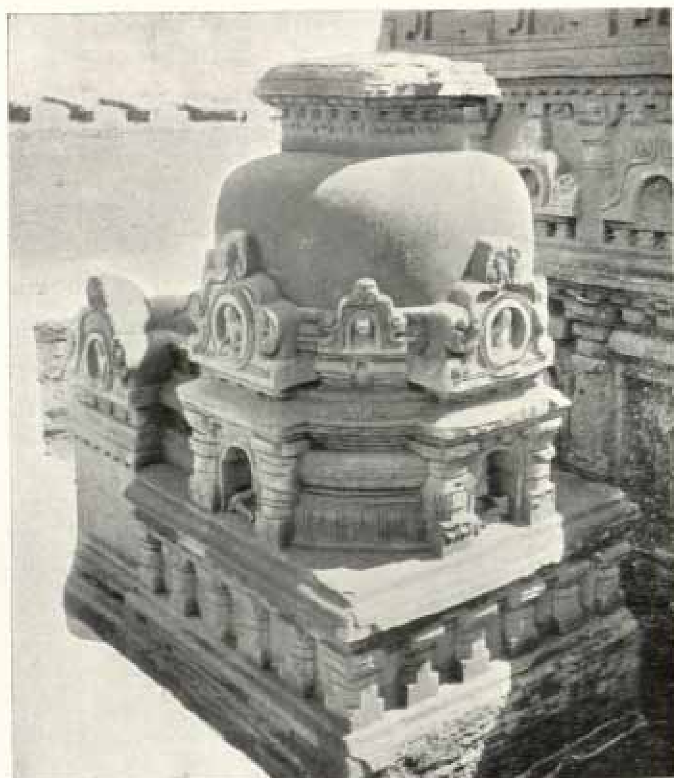


FIG. 19. Nālandā : Votive Stūpa
(Copyright reserved by the Archæological Survey of India)



FIG. 20. Nālandā : Remains of Temple Avenue
(Copyright reserved by the Archæological Survey of India)

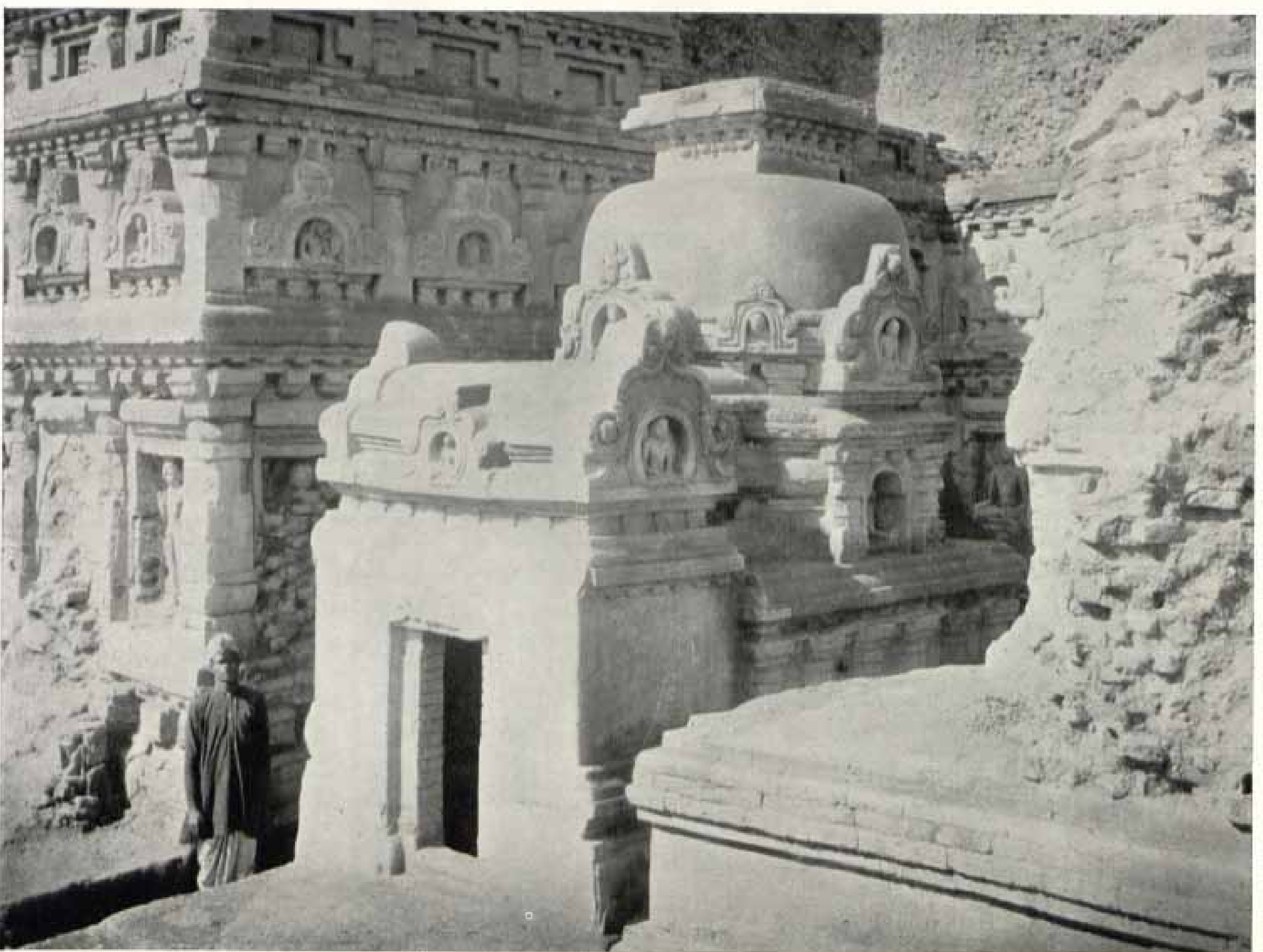


Fig. 21. Nālandā Architecture : Vesara Roof
(Copyright reserved by the Archæological Survey of India)

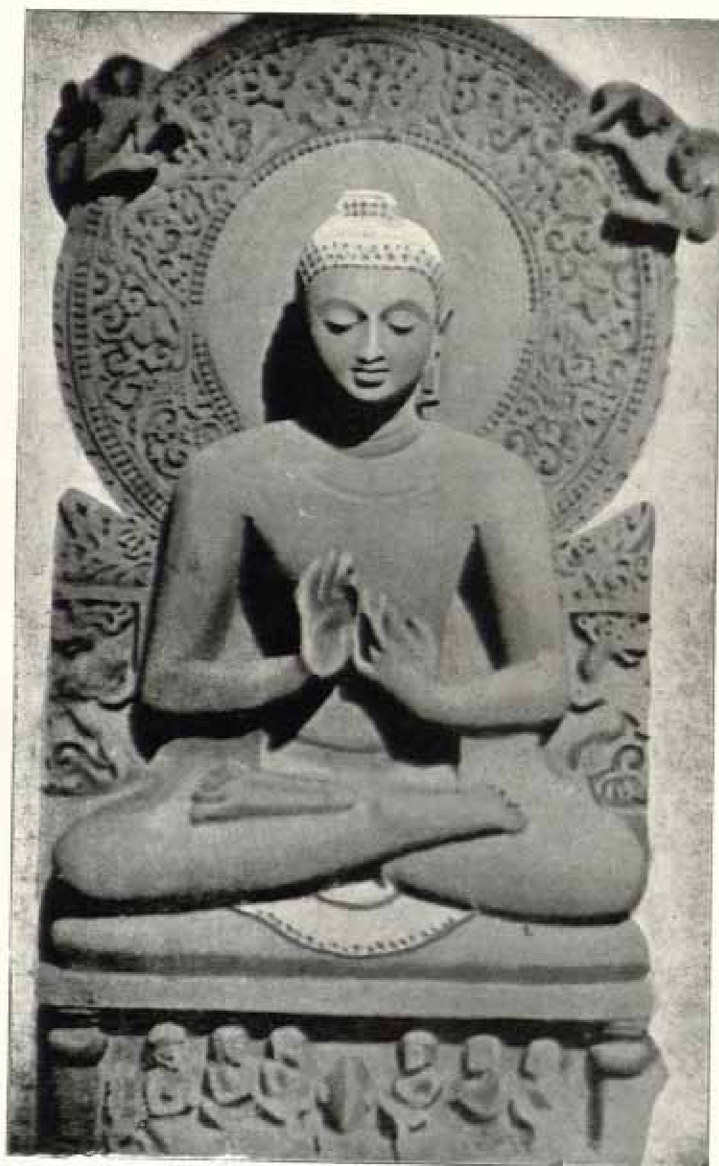


FIG. 22. Sarnath Buddha

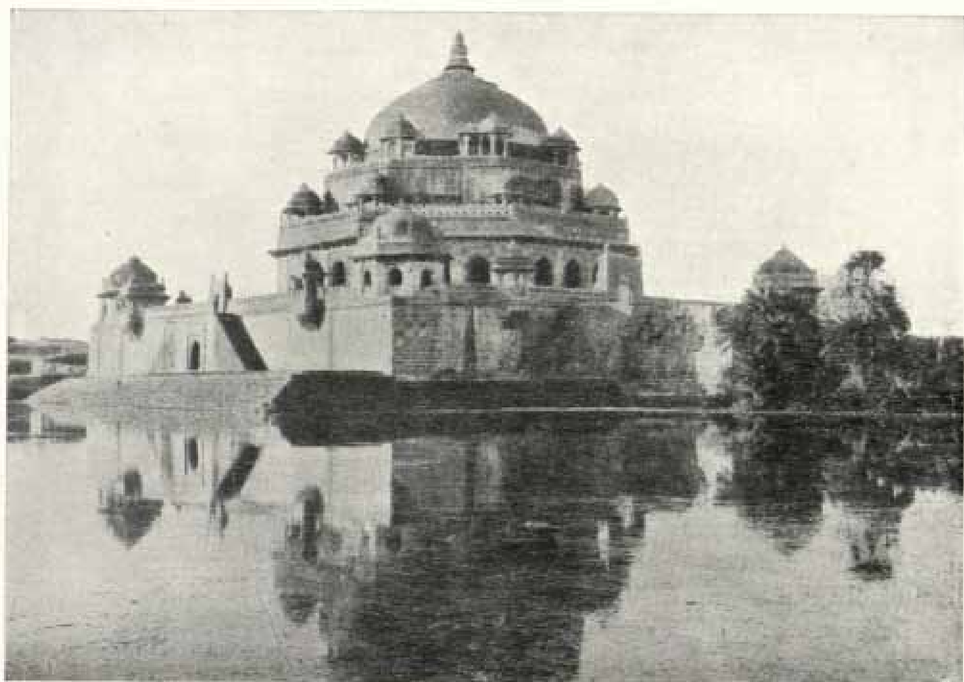


FIG. 23. Sher Shah's Tomb: Sasaram

FIG. 24. Sher Shah's Tomb: Details



FIG. 25. Birla's Lakshmi Nārāyan Temple: New Delhi—Modern Indian

FIG. 26. Hindu Mahasabha Bhawan: New Delhi—Modern Indian

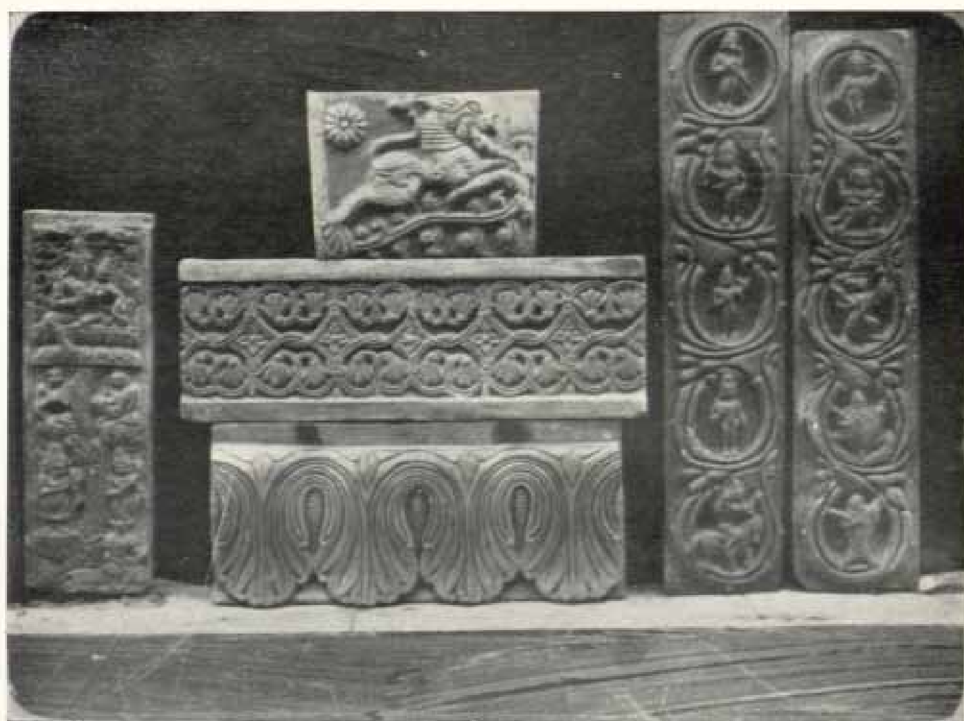


FIG 27. Cement, Wooden and Terracotta Works : Modern Indian



FIG. 28. Birla Dharmasala : Sarnath—Modern Indian
(Gate structure not designed by architect)



FIG. 29. Cement Ganes



FIG. 30. Hindu University : Modern Indian Design



FIG 31. National Hall, Patna—Modern Indian Design

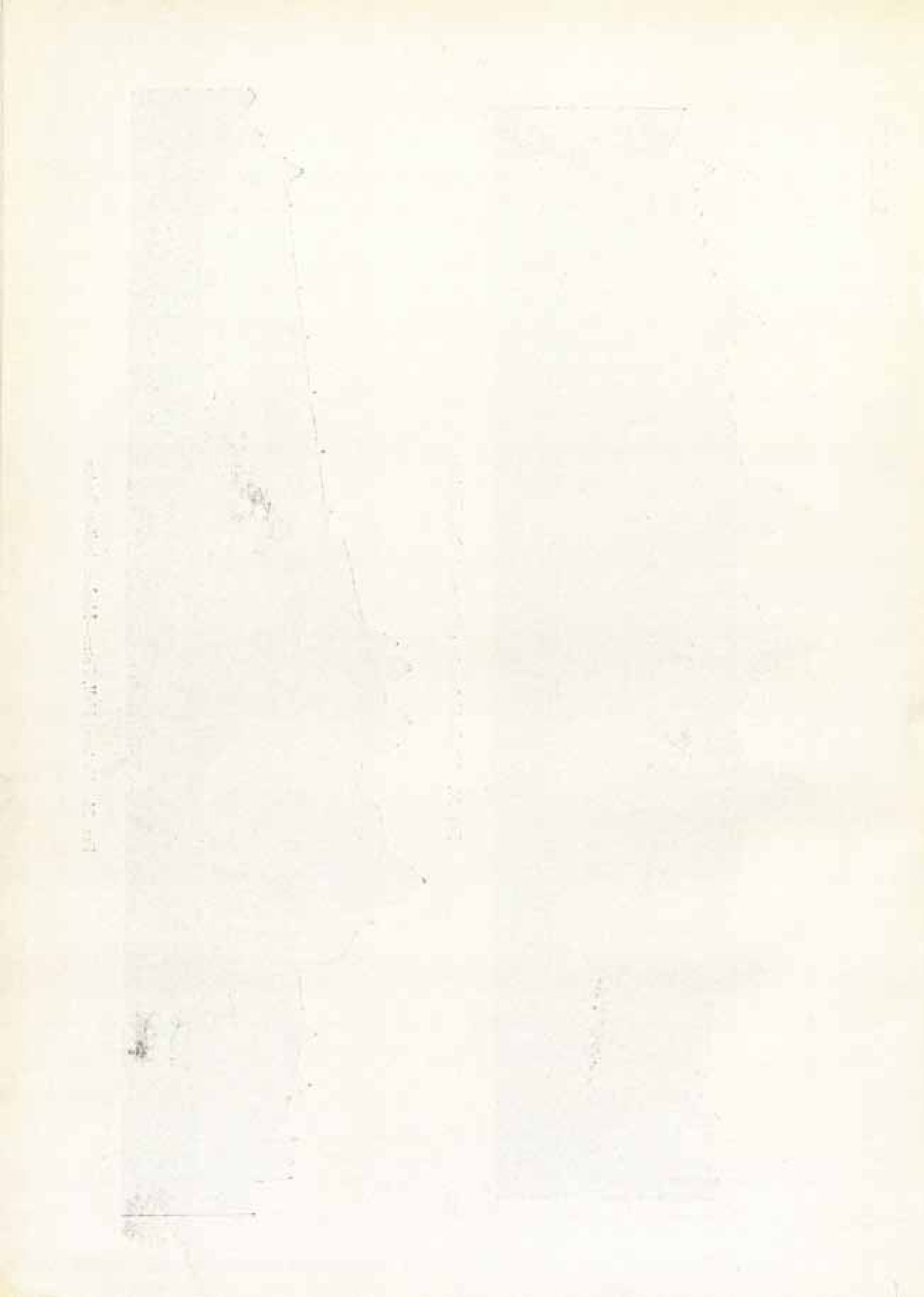
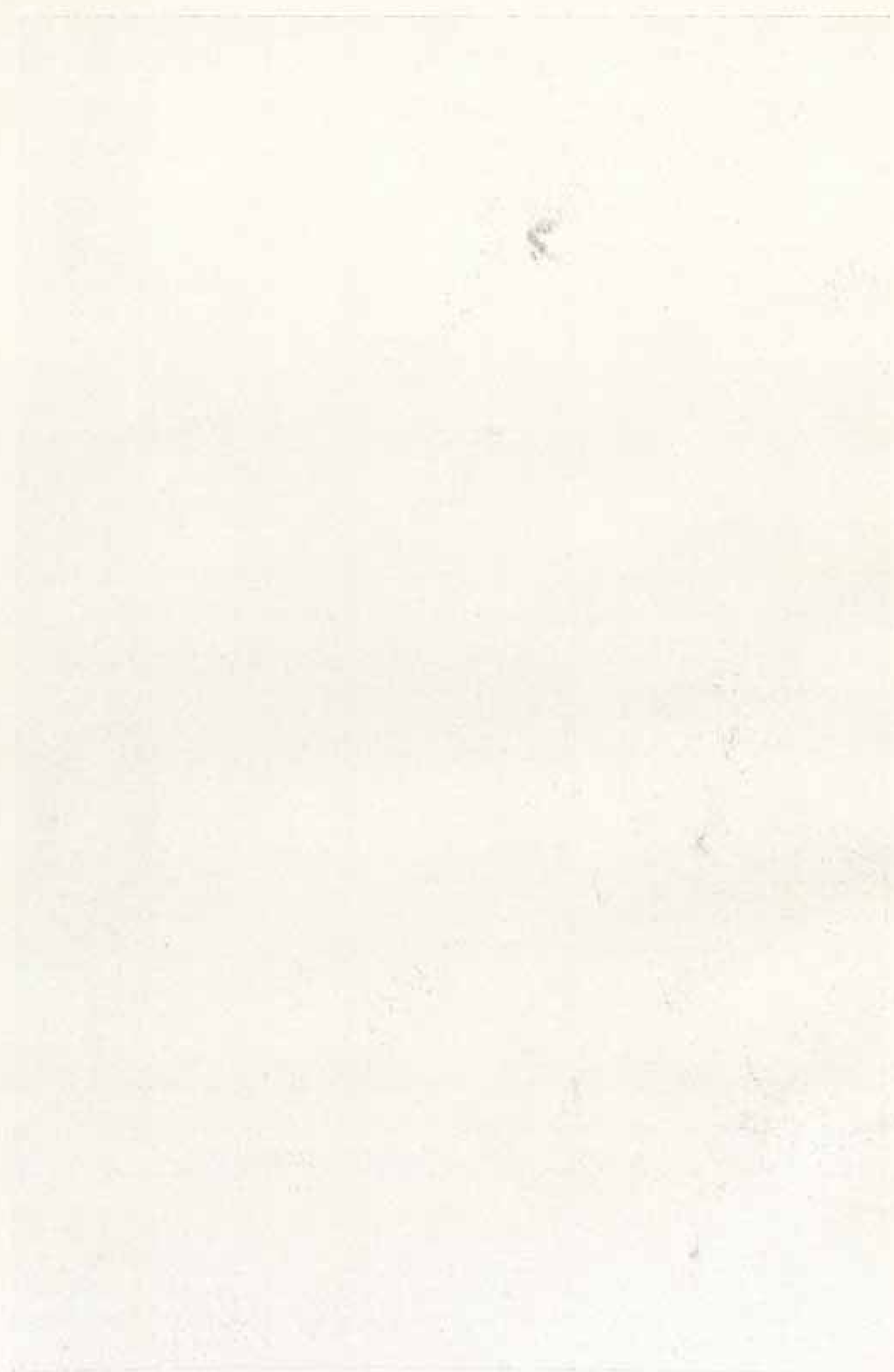




Fig. 32. Hindu University : Facade



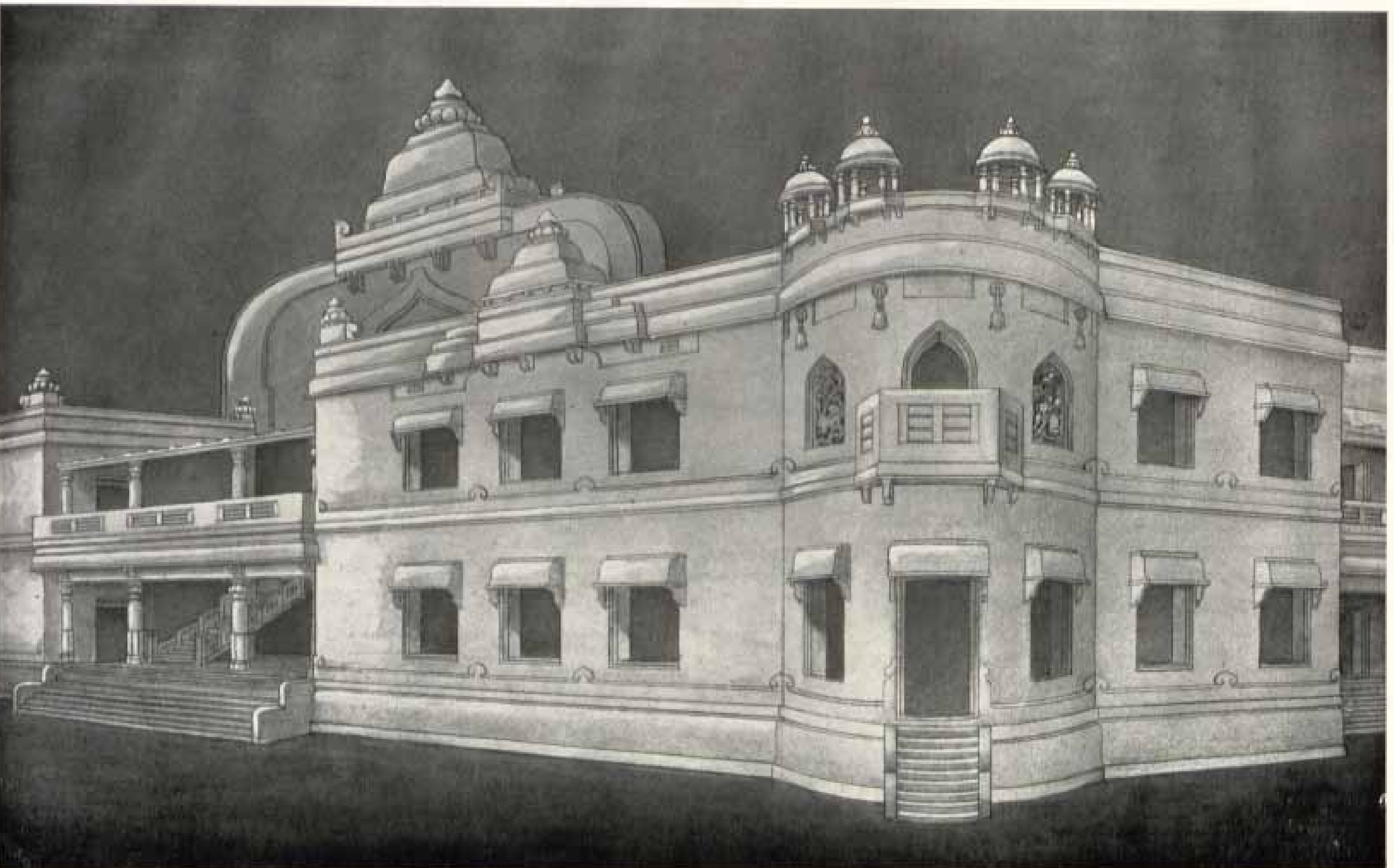


FIG. 33. National Hall: Facade

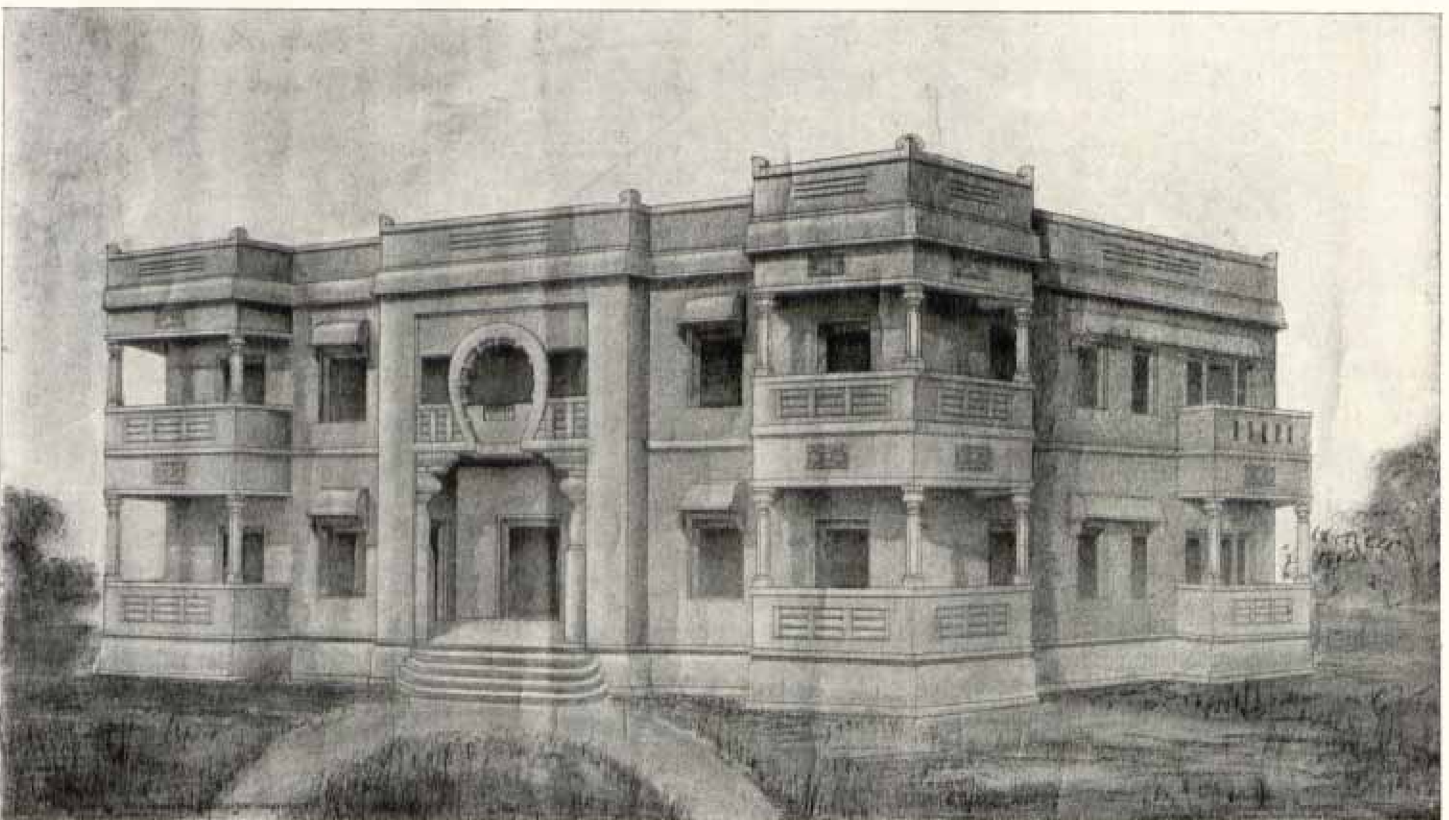


Fig. 34. Modest House: Modern Indian Design
(Drawn by Sj. Panchugopal Banerjee)

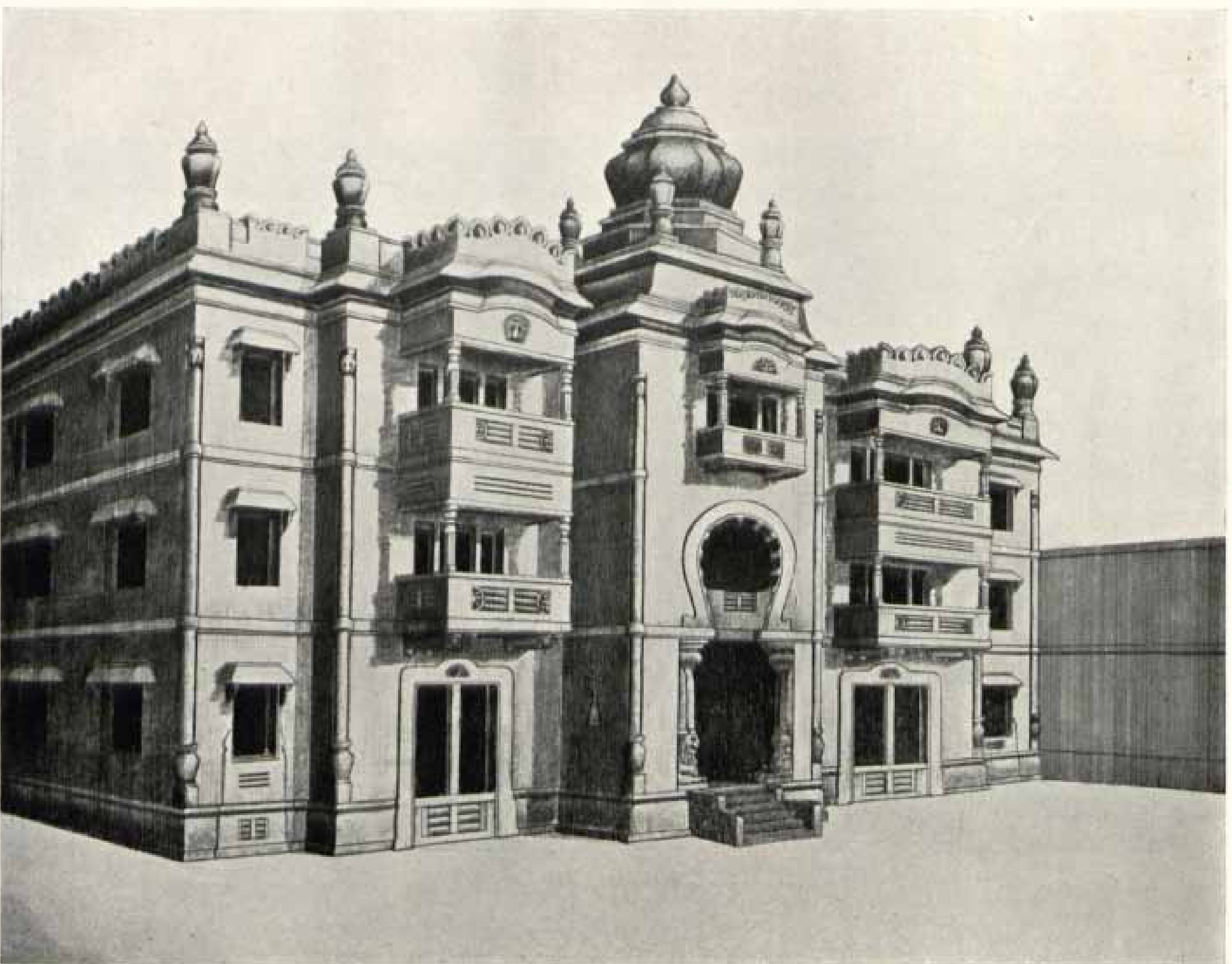


Fig. 35. Nobleman's Residence : Modern Indian Design

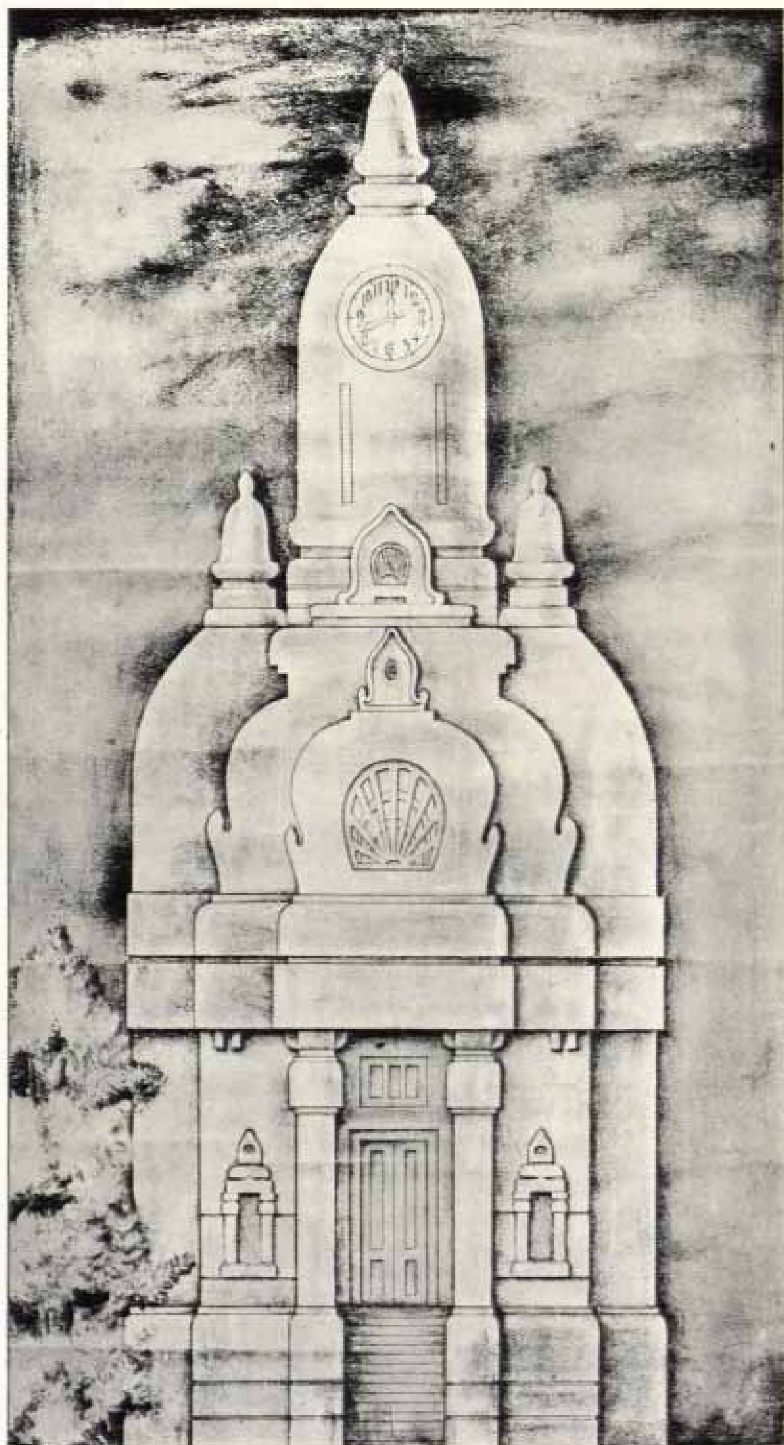


FIG. 36. Clock Tower (Upper Portion): Modern Indian Design



FIG. 37. Simple House: Modern Indian Design



FIG. 38. Siva-Ganga Fountain on Artificial Himalayas: Modern Indian Design



Fig. 39. Gateway to Magadha: Modern Indian Design

PLATE XXV

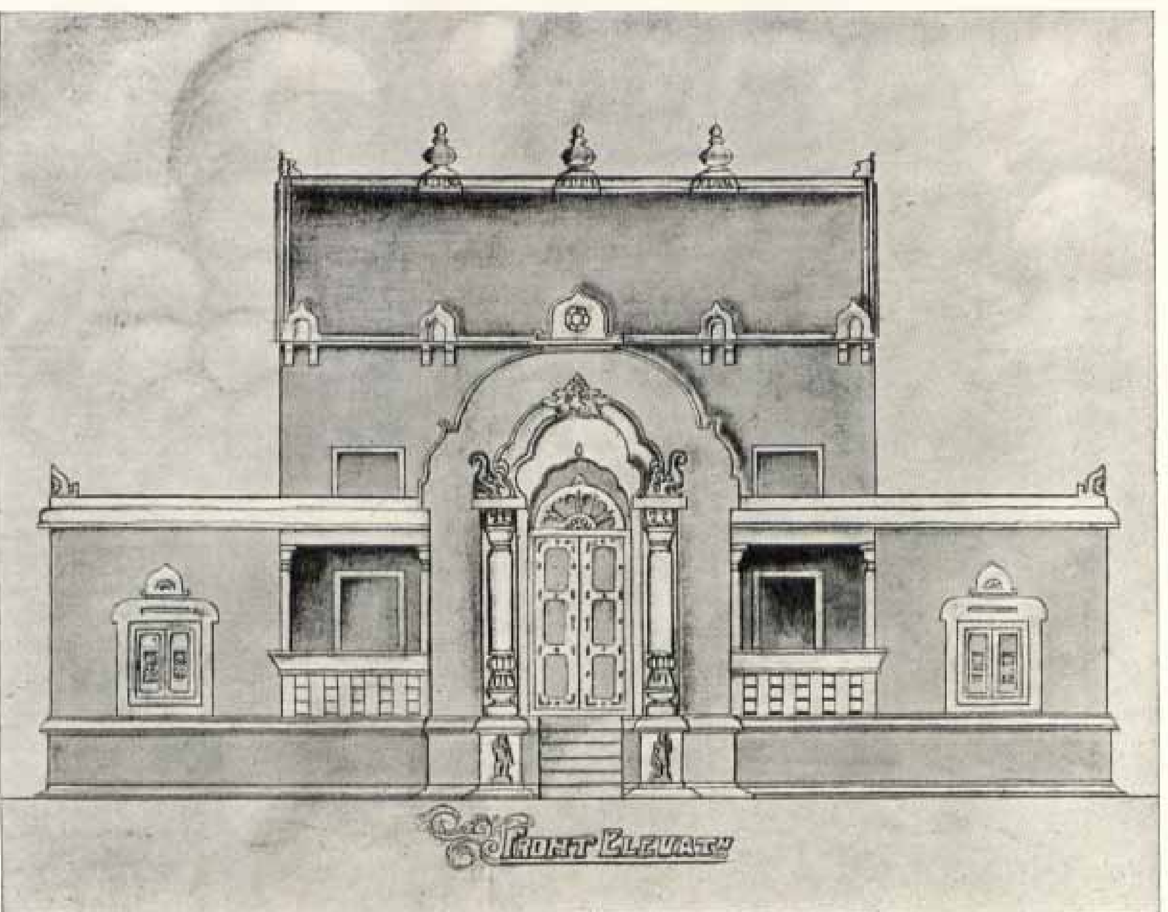


FIG. 40. Library: Modern Indian Design
(Drawn by Sj. Manilal Roy)

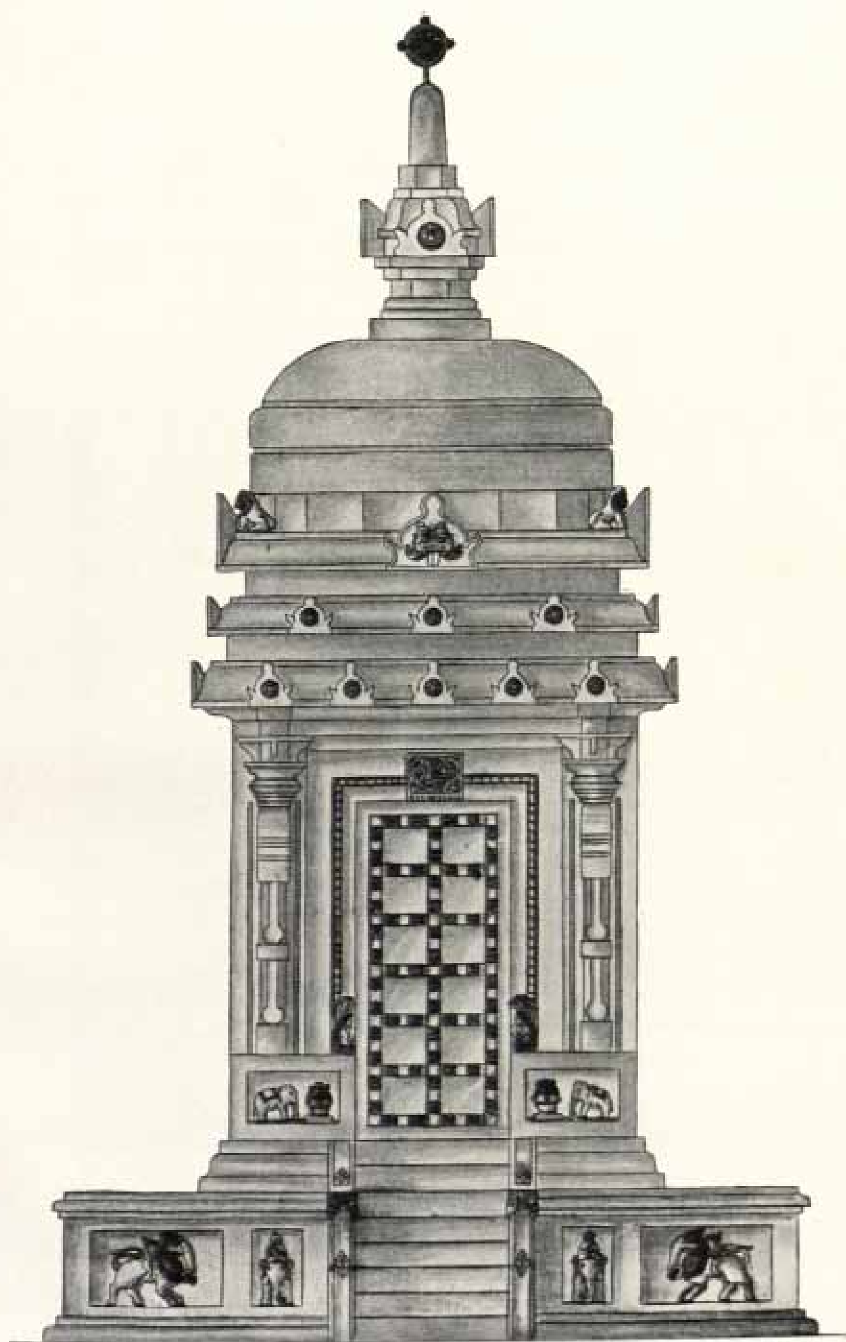


FIG. 41. Siva-Visnu Temple: Modern Indian Design
(Drawn by Sj. Haralal Sil)

PLATE XXVII



Fig. 42. Pārtha-Sārathī: Fresco (Modern)
(Drawn by Sj. Kalikinkar Ghose Dastidar)

PLATE XXVIII



Fig. 43. Birth of Future Buddha, Lumbini Gardens
(Modern Fresco, Mulagandhakuṭi Vihara, Sarnath)

PLATE XXIX



Fig. 44. Defeat of Māra: Attainment of Buddhahood
(Modern Fresco, Mulagandhakuṭi Vihara, Sarnath)

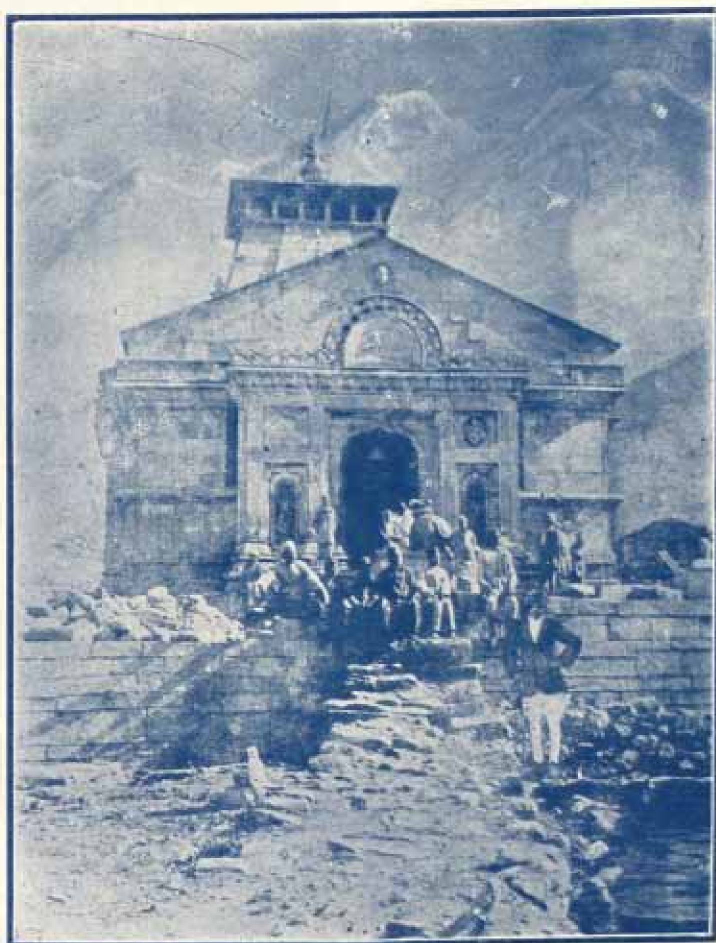


Fig. 45. Temple Kedarnath
(Regional development of Yajña-Śala)



Fig. 46. Trampling of Lotus: Fresco Border (Modern)

